THE BUILDER

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THE BLOOMSBURY SITE

THE decision of the Senate of the University of London to purchase the vacant site north of the British Museum will meet with general approval. There is gratification in the thought that the controversy which has been raging for some years is at last ended, and this thought is seconded by the pious hope that the new University centre will be developed on lines worthy of the capital city of the Empire.

London was renowned for the enterprise of its citizens at a time when Oxford and Cambridge were villages, but it was not until the nineteenth century that the idea of a University for the Metropolis received serious consideration. Since the year 1827, when the foundation stone of University College was laid, the activities of London University have increased in a remarkable way. The University at present is scattered. The central offices are at Kensington, the nucleus of the University is in Bloomsbury, there are such institutions as King's College, East London College, Bedford College, the Birkbeck, the Medical schools attached to the great hospitals, the School of Economics, and many other minor departments. At a cost of half a million sterling the Senate have now purchased eleven and a half acres to the north of the British Museum to form the new centre. This opportunity, which is epoch making, is due to the munificence of the Rockefeller foundation, which was established fourteen years ago by J. D. Rockefeller, with an endowment of a hundred million dollars.

London has educational facilities suited to that section of the community desiring to specialise in the higher branches of culture. It is now recognised throughout the world for science, art and research. Like Paris, London will in time have its Sorbonne, and the proposed development of Bloomsbury will correlate the varied activities which are at present scattered. Viewing the issue dispassionately it can be said that acquisition of the site is more than justified. The British Museum, in itself a University accessible to all, forms the head, University College, already four times the size it was a century ago, forms the northern boundary. The amenities of Bloomsbury, which in the 18th and early 19th centuries were mainly residential, have not altered materially. There is still an air of spaciousness and grace, the squares and wide streets with the uniform houses being among the best in the Metropolis.

The position is served by three trunk railways, by tubes and omnibuses. There are well equipped sports grounds in the suburbs, and there is the possibility of acquiring the Georgian houses in some of the northern squares and converting them to the purposes of hostels and homes for professors.

There now remains the delicate question of a development plan, which will correlate the proposed new buildings and bring them into harmony with those existing. No piecemeal nibbling will meet the present exigencies. Nothing but a definite plan allowing for expansion, and providing for every contingency, should be sanctioned. The buildings required for the centralisation scheme are as follows:—There are the administrative buildings, the Senate House, the central library, ceremonial hall and examination buildings. The Department of Historical Research, at present temporarily housed, requires new premises. In addition there must be a students' union and headquarters for the Officers' Training Corps, as well as a Hall of Faculties. It will be understood that all these buildings cannot be started in the near future. On the contrary, the development or block plan must be schemed in advance, and this demands imaginative handling, as well as full and inner knowledge of the working of universities. Once this plan has been schemed and sanctioned, future buildings could be undertaken, each and severally, as funds permitted. If the plan is on logical lines the individual buildings could be adjusted as occasion demanded.

So far as the geographical situation of the site goes the opportunity is unique; the site is level, and the conventional scenery to be evolved will have to make its own dominant points; but there is no reason to doubt that a good result will be attained. The issue, on every count, is one of the utmost importance, and not the least is the question of the architecture. In the course of the next century the University of London will become the educational centre of the Empire, its ideals being the fulfilment of the common traditions of learning and the extension of the great aspirations of culture. The older universities will continue and make their own appeal, and that independence which is the aim of each provincial university will attract local students in different parts of the country. London University, however, by reason of its facilities, as well as by the growing numbers of metropolitan students, its advanced policy and widespread aims, is bound to become more and more democratic. In other words, it will be the meeting point for students from all parts of the Empire.

To interpret all these visions and realities is the function of architecture, and this raises the question of the choice of an architect. Never at any time in the history of the nation, with the exception of the period after the Great Fire, has such an opportunity occurred for the display of real genius. The art of architecture has advanced from its era of groping and uncertainty, although in some of its manifestations it lags far behind scientific achievement. Opinion to-day no longer inclines either to Classic or Gothic. The choice of a style, or copying and transposing from old models, has now given place to considerations of fine building. The younger generation, trained in the schools, has been led to think in terms of plan, the right handling of material and the adjustment of the more scientific branches of building. There is in consequence a new leaven at work, which in time will eradicate all the evils which at present represent unbridled license. The new University centre is not a subject for wild essays or ridiculous gropings after mere effect, neither is it an opportunity for pictorial display or for individual aggrandisement. In the age of Wren there would have been no doubt of the result; in Sweden an Ostberg could be relied upon to evolve a group of buildings which would be of significant character. In France, a Nenot and in America a McKim or a Goodhue. There are those who doubt the merits of an architectural competition, just as some view with alarm the nomination of an architect. The question of the control of the site as a building project is one demanding an expression of opinion not only from the Senate of the University, and architects as a body, but from the whole of the public. The real issue is bound up with town planning and architecture, and this fact is rendered more patent by the many lamentable mistakes made in the past. To-day something is needed to stimulate English civic design, and at the same time to show the world that this country has a soul above the mundane The old rulings which produced the colleges of Oxford and Cambridge were directed by the autonomous influence of the Church. It is obvious that such considerations do not apply to-day. In an age when science is in the ascendant it would be ridiculous to express modern University buildings in the externals of old Rome, or to furnish elevations in the fustian of columns, pediments and applications of new old styles. As the case is of national importance and one demanding clear thinking and Napoleonic reasoning, we believe that a preliminary building committee should be appointed by the Senate to discuss the architectural and town planning aspects of the problem. Such a body should be advisory, and should consist of those who are disinterested and who would consider the whole question apart from any personal considerations.

NOTES

A Cottage Design.

We note that a writer in a daily paper truthfully remarks on the importance of the roof line and the contours in cottage design. But he goes on to say that the contour should be wide and high, which seems to suggest a serious error in design. The roof outline is responsible for much of the success or failure of cottage design, and the general form and effect of a cottage or block of cottages are dependent on pleasing lines of roof. Many cottage designs have lost their quality by the reduction of the pitch of roof, by awkward dips and ungainly dormers. A high pitch roof is not necessarily an essential point in cottage design as the many low-pitched roofs of old cottages in Yorkshire testify, but the high-pitched roofs in the Cotswold district certainly have a picturesque quality which is very attractive. With regard to windows we all know that the proportion between solids to voids is of vital importance, and it is in the happy relation of openings that the capable designer scores. In the old cottages the robust and solid look is produced by the smallness of the window openings, and if one makes the windows both wide and high we at once discount much of the charm of the old work. The failure of many modern cottages in contrast with the old, lies in the unhappy disposition and the size and proportion of windows.

Restoration of Rheims Cathedral.

It is no doubt not necessarily assumed that in replacing the sculptures on Rheims Cathedral, destroyed by the bombardment, we can retain the feeling and character of the lost originals. And yet how often this is assumed to be the case? Is it desirable that imitations should take the place of the destroyed sculptures, or do they offer us any compensation for the loss? May they not, on the contrary, make the loss yet greater? It appears to us that the better way, if the sculptures are to be replaced, is to take the adventure of art and for good sculptors to be employed to do the work, leaving them the freedom of their own interpretation. The only other alternative would appear to be that of accepting the loss. If different periods of architecture may be seen to combine, is it not possible that modern sculptors can work in enough sympathy with the conditions to make their work combine as well? In any case, the fact remains there is no alternative, for the mere attempted reproduction of the destroyed work is no contribution to its restoration, rather an addition to the loss. It will be better in all ways when we have the courage of our own work restored to us, and freedom is given for the interpretation and living force of our own vision to come into play, instead of this everlasting resuscitation of perished forms. Mediævalism is dead, but its spirit allied to all time is with us now, when we have conviction enough to liberate it.

Royal Academy Exhibition, 1927.
"Syrinx." Head in Lead.
Mr. Charles Wheeler, Sculptor.

From a Model in the R.A. Exhibition, 1927.
"The Lighthouse."
Mr. Henry Poole, A.R.A., Sculptor; Mr. J. F. Wilson, R.B.A., Architect.

Vandalism in the Rosthwaite Valley.

We confess to a desire for further depredations on the road fund by the Chancellor of the Exchequer when we see the damage resulting in the really disastrous mutilation of the road from Keswick to Rosthwaite and beyond. There is really no reason, so we learn from some motorists themselves, why they should not slow down when passing, and would not this have been better than the rude dismemberment of this once enchanting roadway? It seems we have lost our sense of proportion in these matters. After all, if asked, we should all prefer a beautiful roadway preserved, even at the loss of a little pace when motoring, and the winding grace of this road was worth more consideration than such facilities. The very objects which bring people to this neighbourhood, its lovely surroundings and associations, are thus sacrificed for the means of reaching them, which does seem absurd. The familiar landmarks of rock, tree, fern, bank, and winding road so dear to the pedestrian as he passed along are now suffering a change, which to him, the truest user of the road, will mean a loss quite irreparable.

East Kent.

Professor Abercrombie, in addressing the R.I.B.A., on development in East Kent, mentioned a case where outrageous design has been inflicted

in recent years by a local authority which erected "unworthy and depressing" houses in close proximity to a town which is famous as an example of mediæval beauty. He pointed out, by way of contrast, that when the same town produced an historic pageant, it sought expert advice as to incident and costume, yet its housing scheme was not thought worth a qualified architect. The pageant has faded—the houses remain. Such cases are common, and it is good to note, in the R.I.B.A. Annual Report, that letters of protest have been addressed to local authorities guilty of this short-sightedness. It would be of great assistance if influential citizens could be persuaded, in such cases of vandalism, to put the matter fairly and squarely before the public in the local Press.

The Poster. The President of the British Poster Advertising Association remarks in a letter to the Press that "ugliness never brought honourable trade," and suggests that the simple recognition of that truth alone would be enough to urge commerce to seek out artistry and cleanly suggestiveness on the hoardings. The President is further of the opinion that "too often when posters are condemned it is really enamel signs that are at fault." With this we agree. The blatant enamel sign is one of the worst among futilities, and its durability is one of its great disadvantages. Even after its ostensibly useful purpose is over it continues to deface the railway station or the fence where it was put up. One must hope that advertisers will not confine their efforts to the great work they are doing in improving the poster, but will also devote a little energy to removing ancient enamelled landmarks.

Royal Academy Exhibition, 1927.
Madonna and Child.
Mr. David Evans, Sculptor.

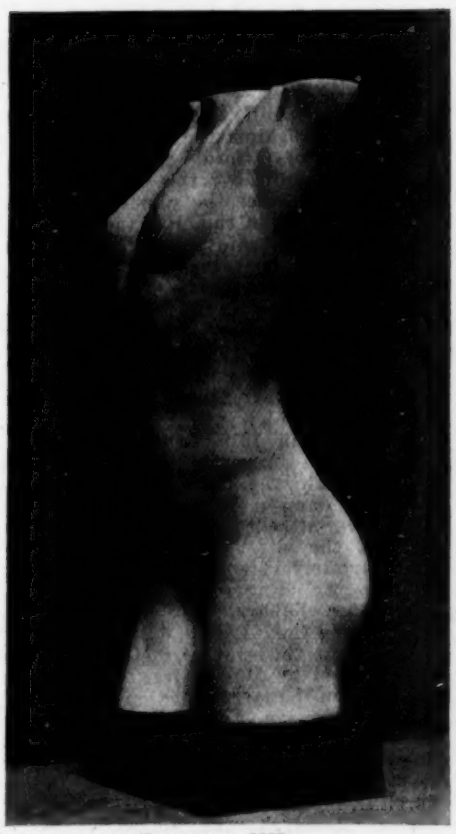
Royal Academy Exhibition, 1927.
Boy with Melon. Carved Wood.
Mr. Frederick E. C. Gardner, Sculptor.

Venice and London. The charm of atmosphere in London is an endless pleasure and wherever we travel we come back to our streets and parks and squares with ever-increasing pleasure in the wonderful effects of light and shade which seem to be a special heritage of London. In a clever series of drawings at the Walker Galleries in Bond Street, Miss Keir gives us parallel scenes from Venice and London which show that to the eye of the artist one may find as pleasing effects of soft and mysterious lights and shades in our overgrown metropolis as can be found on the shores of the Adriatic.

The Lighthouse. The idea of incorporating anything so utilitarian as a lighthouse in a sketch model of a War Memorial is a departure from the practice of the last few years when many memorials have been purposely given forms as remote as possible from public service of any other than a spiritual nature, but the sketch model exhibited in the Lecture Room of the Royal Academy by Henry Poole, A.R.A., and J. F. Wilson, R.B.A., is none the less interesting on this account. A hundred years ago the memorials of Waterloo took the shape of substantial contributions to the practical well-being of the community, and it has still to be shown that they were one whit the less effective as memorials on that account, or that they failed to inspire that best form of patriotism which helps forward communication and establishes civilisation upon a wider basis. The little lamp in the darkened shrine may appeal to many minds, but the great lamp of the lighthouse has the same spiritual value which is not lessened but increased by its practical function.

Welcome Bequests. It is pleasant to note that the profession benefits by the action of the late Mr. Delissa Joseph, whose will has just been made public. Half of his residuary estate goes to the R.I.B.A. to found a scholarship for study in America, and the testator has also left £200 a year to one of his assistants and £100 a year to another.

Tree Culture. In view of the interest evinced in our article on "Treeless Tracks" in our issue for April 29, we are glad to call attention to "the Men of the Trees," a society founded to encourage the planting and care of trees to educate public opinion on forestry and generally to foster the love of trees in every section of the community. The hon. secretary is the Hon. Mrs. Grant Duff, 16, Mulberry Walk, Chelsea.



Royal Academy Exhibition, 1927.
Torso. Marble.
Mr. David Evans, Sculptor.

GENERAL NEWS

Professional Announcement.

Sir John W. Simpson and Mr. Maxwell Ayrton having dissolved partnership, Mr. Maxwell Ayrton has moved his office to 7, Grosvenor Street, New Bond Street, W.1. Tel. Mayfair 1470.

Oxfordshire Town-Planning Conference.

The Oxfordshire County Council has decided to convene a conference of district councils to consider the desirability of joining a regional town-planning scheme to include the whole of the county.

Rheims Cathedral.

The nave of Rheims Cathedral, which has now been sufficiently restored to be used for public worship, was on Wednesday of last week formally handed over by the civil authorities to Cardinal Luçon, the Archbishop.

An Album of Sketches.

An album containing sketches and water-colours by about 100 artists was sold by auction at the 112th anniversary dinner of the Artists' General Benevolent Institution at the New Princes Galleries last week. The bidding started at 50 guineas, and the album was knocked down to Mr. Maurice Webb for 150 guineas.

A Nature Reserve in Staffordshire.

Hawksmoor Nature Reserve, near Cheadle, will be dedicated for the benefit of the public to-morrow, May 7. The estate, which consists of 207 acres and is about 600 ft. above sea-level, has been acquired for the nation by the National Trust, and Lord Grey of Fallodon, vice-president of the trust, will take part in the opening ceremony. In addition to its natural beauties the estate is a favourite resort of birds, including some rare species, and one of the objects of the National Trust in acquiring the reserve has been to make it a sanctuary and a place for the preservation of animal life.

Newport's Civic Centre.

Newport (Mon.) Corporation has decided to acquire a site on which to build a new town hall and law courts. The cost will be about £500,000.

Advertisement Hoardings at Oxford.

The Oxford Bill Posting Company has issued a writ against the Mayor, Aldermen, and citizens of Oxford. They claim that under the Act of 1847 the Corporation has no power to enforce the removal of certain poster hoardings in the city, and ask for an injunction to restrain the Corporation from removing such hoardings or otherwise proceeding to enforce the notice.

London University and Bloomsbury.

We understand that the University of London has at last acquired the Bloomsbury site for extension. The University site is that which was bought by H.M. Government in 1919 from the Duke of Bedford for University purposes, but was reconveyed to the duke after the University had found it impossible to accept the conditions attached to the Government's offer of the site. It covers an area of approximately 11 acres, including roads, or 8½ acres excluding roads and the garden of Torrington Square, and lies immediately north of the British Museum, being bounded on the south by Montague Place, on the west by Malet Street, on the north by Gordon Square, and on the east by Woburn Square, Upper Montague Street, and Russell Square. Part of the site is now occupied by temporary buildings serving purposes connected with the University, including the Institute of Historical Research, the School of Slavonic Studies, the Students' Union, and the Architectural Atelier.

OBITUARY

The Late G. H. Fellowes Prynne, F.R.I.B.A.

MR. G. H. FELLOWES PRYNNE's death on the 7th inst. will create a loss in the profession of Architecture, which cannot easily be filled. He was President of the Architectural Association in 1899 and 1900, and took an active part at all times in the affairs of the A.A.

Amongst his official appointments were those of Oxford Diocesan Architect, and a member of committee of Honorary Consulting Architects to the Church Building Society. The second son of the Rev. C. Rundle Prynne, he was born at Plymouth in 1853, and was educated at Chard College and Haileybury. He was a pupil of R. C. Windyer, of Toronto, Canada; and later entered the office of Geo. Edmund Street, R.A., as a pupil. He entered the R.A. Schools as a student in 1876.

Although he carried out some domestic work, notably Hadlow Grange and Gifford House, Roehampton, ecclesiastical work occupied the greater part of his time. In the West of England there are many delightful examples of his art. The earliest of his works in the West is St. Peter's, Plymouth. He built or restored many well-known churches in Devon and Cornwall, such as St. Peter's, Budleigh Salterton; Holy Trinity, Exmouth; Newton Ferrers, Broadhembury; and Buckland-in-the-Moor; St. Austell, South Petherwyn; St. Neot's; St. Cleer; St. Columb Major; and Poundstock. Nearer London his work will be recognised in the churches of All Saints', West Dulwich; St. Saviour's, Ealing; Holy Trinity, Roehampton; St. Peter's, Staines; All Saints', Sydenham; St. Mark's, Purley; St. Peter's, Bushey Heath; St. Peter's, Harrow; and St. Nicholas's, Taplow. His design for the Colombo Cathedral, Ceylon, was accepted before the War, and this when completed will be his finest work.

In a short note such as this it is impossible to do justice to the life work of a devoted Churchman and a great architect. A master of fine detail, and with a sound knowledge of colour and craftsmanship, he brought to his task the enthusiasm and skill which ecclesiastical work in particular demands.

ROYAL ACADEMY EXHIBITION, 1927.

The late Archdeacon Buckley. Bronze.
SIR W. GOSCOMBE JOHN, R.A., Sculptor.

COMPETITION NEWS

Wiltshire Working Men's Conservative Benefit Society. Proposed New Offices, Trowbridge, Wiltshire.

The assessors in this competition, Messrs. Cyril A. Farey and Robert Lowry, A. and F.R.I.B.A., have made their award as follows:—

1st: Messrs. F. J. Lander, A.R.I.B.A, and E. A. D. Tanner, A.R.I.B.A., c/o Mr. Louis de Soissons, F.R.I.B.A., S.A.D.G., city architect, Estate Office, Welwyn Garden City, Herts.

2nd: Messrs. C. F. Bates, A.R.I.B.A., and C. L. Jones, L.R.I.B.A., Capital and Counties Chambers, 30, Commercial-street, Newport, Mon.

3rd: Mr. A. B. Llewelyn Roberts, of Messrs. Collcutt and Hamp, 126, Wigmore-street, London, W.1.

Highly Commended: (No. 2) Messrs. Harry L. Black and Thomas Stott, 3, Newton-road, Bayswater, London, W.2; (No. 27) Messrs. Cruickshank and Seward, A.R.I.B.A., Crown Buildings, 18, Booth-street, Manchester; (No. 31) Mr. D. F. Martin-Smith, A.R.I.B.A., Miss E. Moseley, A.R.I.B.A., and Mr. A. S. Knott, A.R.I.B.A., 45, Bloomsbury-square, London, W.C.1; and (No. 74) Mr. C. H. James, F.R.I.B.A., of Messrs. James and Bywaters, 15, Gower-street, Bedford-square, London, W.C.1.

The whole of the designs submitted have been on exhibition during the past week at Holy Trinity Church Hall, Newtown, Trowbridge, between the hours of 10.30 a.m. and 12.30 p.m. and 2 p.m. and 4 p.m. The exhibition closes to-morrow. Eighty-six designs were submitted. Premiums totalling £250 are to be awarded.

Strode Park Estate: House Design Competition.

We have received the following notice from the R.I.B.A.:—

"Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published regulations of the Royal Institute for Architectural Competitions."

Council School, West Bromwich.

West Bromwich Education Committee have decided to promote an open competition for designs for a proposed new Council school on the Charlemont Estate.

MEETINGS

SATURDAY, *May* 21.

Institution of Municipal and County Engineers.—North-Eastern District Meeting. Berwick-on-Tweed. 2.30 p.m.

MONDAY, *May* 23.

Architectural Association.—Exhibition of Modern Danish Architecture, opened by the Danish Minister, 5, Queen-square, W.C.1. 3 p.m.

Royal Institute of British Architects.—Mr. A. J. Davis, F.R.I.B.A., on "Moorish Architecture in Northern Africa." 9, Conduit-street, W. 8 p.m.

TUESDAY, *May* 24.

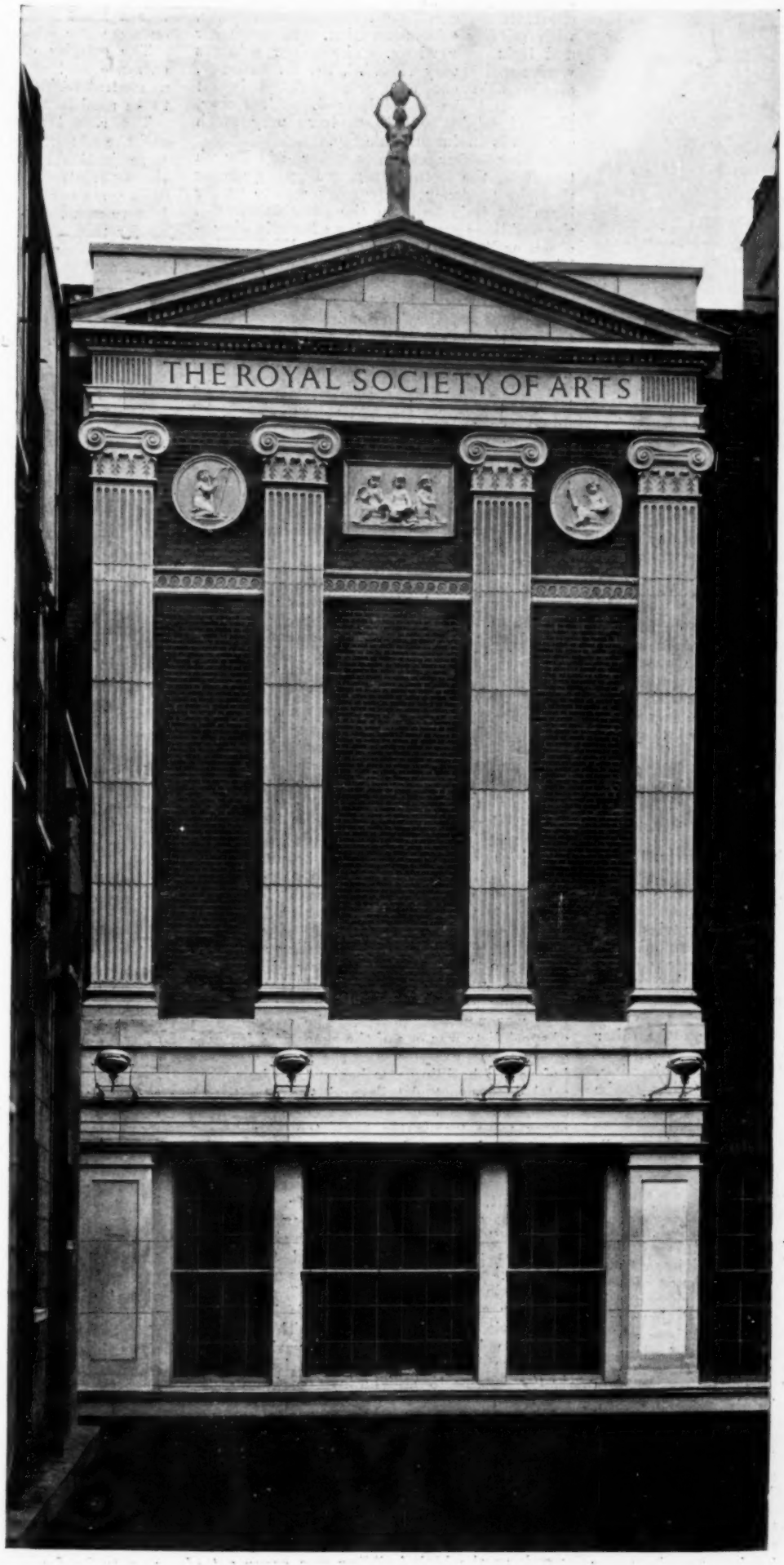
University Lectures.—Mr. W. H. McLean on "National, Regional and Town Development Planning," University College, Gower-street, W.C.1. 5.30 p.m.

WEDNESDAY, *May* 25.

National Housing and Town Planning Council.—Conference at Town Hall, Plymouth. 11 a.m.

THURSDAY, *May* 26.

Institution of Municipal and County Engineers.—East Midland District Meeting at Town Hall, Ilkeston. 10.45 a.m.



Refacing of Durham House Street Frontage of Royal Society of Arts Premises, Strand, W.C.

Sir Aston Webb & Son, Architects.

RECENT DEVELOPMENTS IN HOSPITAL PLANNING ABROAD.

Mr. Lionel G. Pearson, F.R.I.B.A., read a paper on this subject at last Monday evening's meeting of the R.I.B.A., when the President, Mr. E. Guy Dawber, A.R.A., occupied the chair. The lecturer, in opening his address, said that his original intention was that his paper should follow on after a lecture by his partner, Mr. Adams, on English Hospitals. Personally, he was sorry that Mr. Adams had decided to give a separate paper on the subject of British Hospitals, as it would have been extremely interesting to make a comparison between the work done in this country and abroad. However, in view of the very wide field to be covered, he was sure his partner's decision was a wise one, and they would look forward to an exhaustive paper on this subject at some future date.

He was confident (the speaker continued) that no country in the world had finer hospitals than England, but he thought everyone would agree that there was much to be learned by seeing what other countries were doing in that line. It would be found that the European hospitals were more on the lines we adopted in this country—that was to say, the horizontal type of planning was the favourite, and a modified type of the pavilion system still held its own; but on the other side of the Atlantic there was a strong tendency to adopt the vertical type of planning, and the pavilion system was coming to be regarded as old fashioned, though there were still many examples of the latter (such as the Peter Bent Brigham Hospital at Boston, and the John Hopkins Hospital at Baltimore). There were some critics who would say that in Europe the comfort of the patient was the first consideration, while in America the efficiency of the staff was put before everything else, but the two points of view would seem to be of almost equal importance to the hospital planner. The science of hospital planning was pursued very successfully in all the countries he visited, and there was a friendly rivalry to produce buildings which were up to date from the point of view of medical science and at the same time attractive to the patient. Apart from the general features, such as the planning of the wards, the arrangement of the operating blocks, etc., he was specially interested in the planning of (1) the private patients' rooms, and (2) the X-Ray departments, as both these were important recent developments in hospital planning. He was cheered to find in his journeys that some of the difficulties that beset hospital architects in this country were apparently universal; for instance, he never met a sister who was really satisfied with the accommodation provided for linen, or found a type of window which admitted fresh air without causing a complaint from some patient in the ward.

Having described some Dutch hospitals, the speaker said the characteristics which might be said to be typically Dutch were cheerfulness, cleanliness, and common sense, with solidity of construction, and fresh air and light everywhere. The colour schemes were usually very cheerful, as, for instance, corridors in one case were painted bright yellow and doors bright red. Altogether, Holland might be said to have very much our ideals in hospital design.

Having described a number of Danish hospitals, the lecturer summed up by saying that the tendency in Denmark was to prefer large hospitals built in the pavilion system, the buildings generally being of ample dimensions, well built, and well fitted internally. The objection to this system was undoubtedly the length of the corridors and the amount of energy expended by the staff in conveying themselves and the food and stores over these considerable distances. In addition to this, the monotonous repetition of blocks was very depressing architecturally, and the size of the institution must rather eliminate the human element. However, there were, no doubt, very great advantages to be gained in other ways, as the Danes were an extremely practical people, and their hospitals had a very high reputation.

After describing a recent Swedish hospital, the speaker said there had been a distinct attempt made in recent hospital design in Sweden to make the buildings architecturally attractive, and this was to be expected in a nation which was so artistically alive. The small wards, and to some extent individual sanitation, were approaching the up-to-date American model, but there was a lack of finish in the detail and the constructional methods, which fell much behind the best American work. Perhaps in the cold northern climate there was not the same necessity for precautions as to ventilation, rounded angles and all the detail we considered of such importance.

Coming to a consideration of American hospitals, the lecturer pointed out that the industrial expansion of recent years had led to a great building activity, especially in the big cities, and the number of hospitals alone which had been built during the last ten years was amazing, and it would be almost impossible to visit them all personally unless anyone was prepared to spend many months about it. Fortunately, the leading architects were mostly located in New York and Chicago, and as they were most generous in imparting information and showing plans the task was much simplified. The co-ordination of specialists was one of the successful features of American practice, and the result was that before the building was begun the plans were settled in great detail, and the result was speed and efficiency in the erection. Conferences were frequently held, too, during the progress of the works, and in some architects' offices there was a special conference room where meetings took place regularly between the client, builder, specialists, etc.

As the great majority of the people of the Eastern States lived in cities, the city hospital was the most usual type, and the multi-storied hospital was the most popular just now, following the line of the office building, hotel or apartment house. This had led to the vertical type of planning, with the elevator, the laundry chute and various other labour-saving devices playing a leading part in the construction. The long corridors of the European hospital were considered quite out of date, and one American visitor remarked after seeing one of our hospitals that he hoped the staff were fitted with roller skates. The concentration which resulted from the vertical plan certainly simplified the problem of the heating, lighting, plumbing and other services. There was also the element of what must be called advertisement, for want of a better word, as the high building was never out of sight and out of mind, which was an important point in a voluntary hospital.

Before describing a number of hospitals in detail, the speaker summarised briefly what he thought were the most noticeable features of a typical American hospital.

The entrance was made as attractive as possible, and the waiting room was furnished like a hotel lounge, and frequently repeated on a smaller scale on the ward floors.

The enquiry office was usually facing the entrance, and was sometimes in the hall itself, as central heating allowed halls and corridors to be used in this way.

The record room was also near at hand, and the methods of filing and keeping records were justifiably a source of great pride to the superintendents and stenographers.

The staircase was not a very important feature as a rule, but the elevator-lobby made up for this.

The kitchen, most frequently placed in the basement and mechanically ventilated, was equipped with every sort of device, electrically-heated food conveyors, electric dish-washing machines, mixing machines, orange-squeezers, etc.

A cafeteria for the staff was now quite usual, and even the nursing staff were treated to this form of self-service.

The wards were now in much smaller units than formerly—16 beds being the maximum, and these were frequently divided by glazed screens into bays of four beds.

The single-bed ward was becoming increasingly the fashion, though an expert had calculated that only 30 per cent. of the patients in an ordinary hospital really required them.

The nurses' station was either in a glazed enclosure overlooking the ward, or else open to the corridor commanding the approach to the ward.

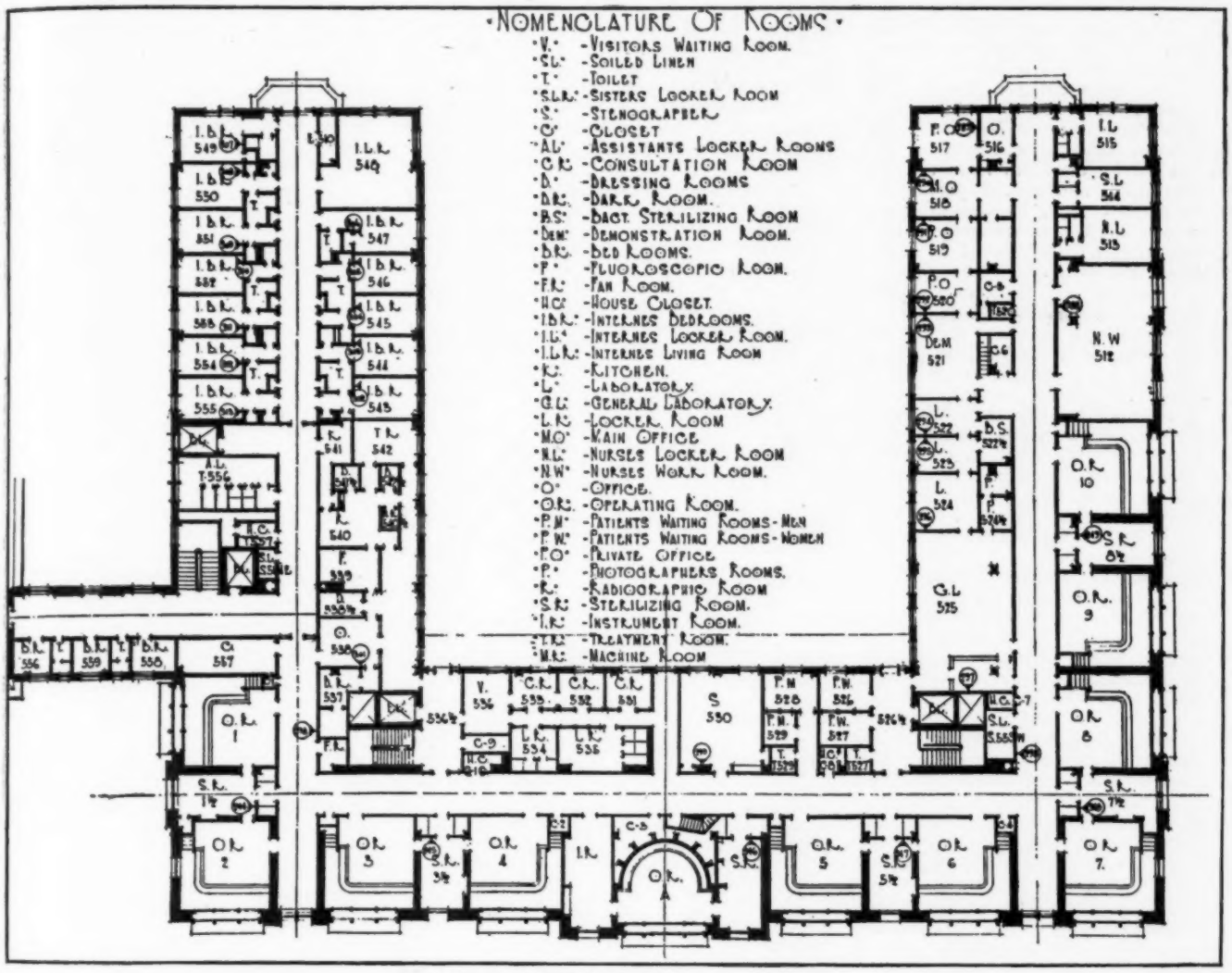
The diet kitchen was centrally placed, and it might be noted that the use of refrigerators was general, and "the larder facing north" not required. Opening off the corridor were linen stores, pails and brooms, etc., and all the usual accessories, including the very important flower-room, with a sink and shelves.

The solarium was either at the end of the ward or a loggia provided on each floor for the use of patients, leaving the ward clear of balconies, and at the top of the building a comfortably furnished sun room was provided with French windows opening on to the "deck" over wards below.

The operating block had an operating theatre with floor and walls of pale grey or pale green tiles, or similar material (he saw only one instance of rubber), and the top-light was decidedly out of fashion. The reason for this was that the present-day surgeon preferred artificial light, and in one instance 100 cases between 7 a.m. and 7 p.m., in the month of October, showed 69 artificial and 31 natural. The anæsthetic room usually opened off the corridor, and was frequently furnished like an ordinary room to avoid the "operation atmosphere."

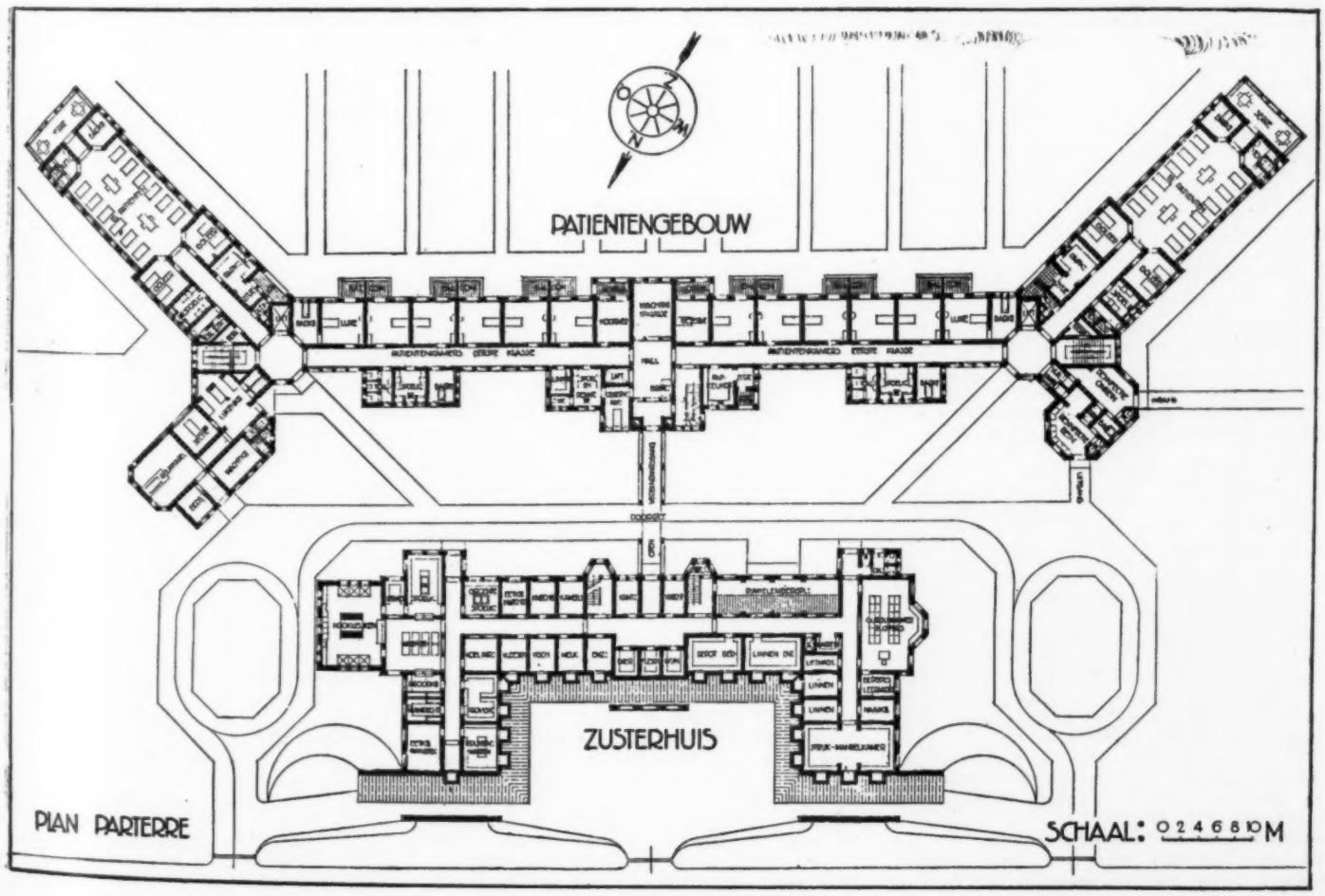
The plumbing of American hospitals was on rather different lines from what we considered correct in this country. The sink room (known as the utility room) opened off the corridor without a cross-ventilated lobby, while baths and w.c.'s (known as toilet) often opened out of the patients' rooms, and were frequently without windows, depending on mechanical ventilation. The pipes were almost always buried in the wall or ceiling, which added greatly to the smartness and cleanliness of the sanitary rooms. All this showed great confidence in modern methods of plumbing, though one suspected that some time there might be trouble ahead.

The increasing importance of X-ray work was nowhere more fully recognised than in America, where the use of X-ray for diagnosis had reached such a point that in one important hospital more than 85 per cent. of the patients were now X-rayed. The result was that there were now many well-planned and splendidly equipped X-ray departments, and one of the best of these was to be found at the Roosevelt Hospital, New York City, where the architects, York and Sawyer, worked out a plan in conjunction with Dr. Steiner. The department was situated on the ground floor, near the operating block, and conveniently placed for the out-patients, and consisted of a radiographic



St. Mary's Hospital, Rochester, U.S.A.

FOURTH FLOOR PLAN.



Red Cross Hospital, The Hague.

MR. CUYPERS, Architect.

room, dark-room with special light-excluding pass-boxes of a revolving type, cystoscopic room, fluoroscopic room, viewing room, with an excellent set of viewing-boxes made of enamelled steel, and filled with Cooper-Hewitt lights, and a room for files. The treatment rooms were in a corner of the building, cut off by corridors from the rest of the department, and special precautions were taken against rays, as the whole of the walls and ceilings were treble-lined with lead, wire-mesh, and finally glazed tiles, and the floor was lined with lead and cork.

There was another very fine X-ray department at the Boston City Hospital, in the New Thorndike Memorial Building (architects: MacGinnis and Walsh). This department was on two floors—on the ground floor, waiting rooms, radiographic rooms, viewing room, and records; in the basement were the treatment rooms (with machines enclosed in a room six feet wide, between two treatment rooms in every case), an exceptionally fine dark-room, with smaller rooms for wet plates, plate-loading, etc. Special attention had been paid to the ventilation—an important point, unfortunately too often overlooked with resultant damage to the health of the assistants. There was a lecture-hall at the end of the corridor, two floors in height, for the use of the department; so that altogether this was in many ways a model of what an X-ray department should be. The colour of the walls found to be most satisfactory by the X-ray men was orange or buff, and several departments had plastered walls coloured to these tints, and the floors were usually tiled like an operating theatre, or covered with battleship linoleum with a border and skirting of terrazzo.

The following points of construction were summarised from the detailed description of the hospitals visited :—

Doors.—The flush hospital door veneered with mahogany was usual for all patients' rooms, and the fanlight was usually solid to match the door.

Windows.—The sash window was almost universal, with or without the fanlight over, and with or without bars according to the design of the architect. A small opening about 7 in. by 2 in. was frequent in the bottom rail of the sash. Jalousie shutters or sunblinds were necessary in the summer.

Floors.—Hardwood floors were used in offices, etc., sometimes, but rarely in patients' rooms. The most usual floor was "battleship" linoleum laid on concrete with a margin and base of terrazzo, rubber tiles for corridors, unglazed tiles or terrazzo for operating theatres. The terrazzo was divided into squares about 4 ft. or 5 ft. by metal strips. Rubber floors and dados were occasionally used in operating theatres.

Ceilings.—Sound-proofing materials were frequently used for ceilings in sheets.

Fittings were increasingly made of metal. Cabinets, linen cupboards, door frames, doors and windows, glazed divisions to form cubicles, beds, and ward furniture.

Signal system had become almost universal. The patient called the nurse by pushing a button which turned on a light over the door and on the annunciator at the nurses' station and superintendent's office.

It was difficult to arrive at any very definite conclusions from a survey which included countries of greatly different climate and conditions, but there were some tendencies which were marked everywhere. The large ward of 25 or 30 beds seemed to be a thing of the past, and smaller units were the rule—16 beds fairly frequent, but 12 beds usually preferred. The number of rooms allocated to private and semi-private use was the most marked feature of the present-day planning, though naturally less marked in Europe than in America. The individual sanitation which accompanied it in the latter country was perhaps rather overdone; it must mean great expense in the cost of plumbing and fixtures and entail a considerable amount of labour in the running of the hospital, but the provision of hot and cold water in private rooms and rooms for nurses and staffs was of great advantage, as the hotels were finding in all countries.

The cross-ventilated lobby was no longer insisted on to the same extent, partly owing to the confidence felt in modern plumbing and partly on the ground of cost. The central corridor, on the other hand, found in so many American hospitals, was not a feature of the plan which we should like to see followed over here, and in this respect the European hospitals would appear to have the advantage in point of cheerfulness and health. In comparing the vertical and horizontal systems of planning, there were points in favour of both, but on the question of extension (which was of primary importance to hospitals), there was little doubt the horizontal system was easier to handle. Mechanical efficiency was found most highly developed in America, but reliance in mechanical means had certain drawbacks, and the case of mechanical ventilation might be given as an instance, but the saving of labour was such an important side of modern life that we ought to welcome any attempts made in that direction. Oil-fuel installations were being adopted increasingly, as they resulted in the saving of labour caused by the handling of coke and ashes, and they also had the advantage of greater cleanliness.

Finally, the question of architectural interest and beauty was now recognised to be just as important for hospitals as it was for banks, churches, and private residences, and it was very encouraging to find that this side had been so much more considered than it used to be in the last century. There was a determined effort to make the buildings attractive both externally and internally, and each country had worked out its own salvation in this respect.

Discussion.

Mr. W. A. Pite, proposing a vote of thanks to Mr. Pearson, said that one felt staggered at the vastness of the detail in hospital design and equipment that architects had to assimilate. It was interesting to find that brother architects in other parts of the world were "up against" the same problems that we encountered in this country. Wonderful methods of centralisation and control were shown in modern planning.

Dr. Jane Walker, J.P., seconding the motion, said that America had no real monopoly of the best hospitals. The lecturer, she continued, had made no mention of round wards, which used to be the vogue, and a great deal was to be said for them from the patients' point of view. In the speaker's opinion there should be no patient opposite another and none opposite a window. No doubt there was much to be said for the single-bed ward, but she would like to see wards with one row of beds only—not two. She felt that very few working-class patients would care to be in single-bed wards for weeks or months on end. The lecturer had said nothing about children's hospitals. She felt that children in hospital ought to be kept separate from both men and women.

Sir Holburt Waring, F.R.C.S., said that American hospitals had the supreme merit of providing the plant and machinery for "working" the patients. In this country, especially in municipal institutions, that point was not sufficiently realised. Referring to the hospital at Copenhagen, which the lecturer had shown on the screen, the speaker said he had seen it, and, while it was a beautiful hospital, it was much more expensive for nursing and the staff than a hospital arranged in the traditional manner. With regard to one-bed wards, it had to be remembered that in our large voluntary hospitals students had to be trained for the medical profession, and hospitals had to be planned to conform to that need. Moreover, while in the U.S.A. the percentage of "charity" patients in voluntary hospitals was small, in this country some nine-tenths, perhaps nineteen-twentieths, of the patients came under that heading. In his concluding remarks, the speaker criticised the "sanitary tower," as being a feature that might be very much better than it was, and said that hospitals need not necessarily be beautiful, but should serve their purpose economically.

Dr. Louisa Martindale said that the pavilion system of planning was best seen in Germany, where hospitals were planned for 2,000, 3,000, and even 4,000 patients. Referring to the planning of operation theatres in connection with post-graduate courses in America, the speaker said that if one could not follow the stages of an operation directly by looking down, it was possible to do so by means of a mirror.

Mr. C. H. James said it would be interesting to know what effect the war had had on hospital design. Operations had been carried out during the war in the most unsuitable places, according to modern principles of hospital hygiene, yet without any harm to the patients.

Mr. Charles Elcock emphasised the need for research with regard to hospital floors.

The President, having made a few remarks, Mr. Pearson, in reply, said he agreed that we were rather hidebound by tradition. In America he saw no children's hospitals, but babies' wards. He did not come across a single instance of a circular ward. He thought the war eventually would have some effect on hospital planning. During the war he was in a house by Mr. Ernest Newton, in the Malvern Hills, which was turned into a hospital, and it was quite delightful, though never intended for such a purpose.

At last Monday evening's meeting of the R.I.B.A. the hon. secretary announced with deep regret the death of the following members :—

George Halford Fellowes Prynne, elected Associate 1881, Fellow 1891.

[Mr. Fellows Prynne was a Past-President of the Architectural Association, and represented that body on the R.I.B.A. Council from 1898 to 1900. He also served on the R.I.B.A. Council from 1900 to 1904.]

James Leonard Williams, elected Fellow, 1906.

Percy Joyce Adams, elected Associate, 1915.

[Mr. Adams was Ashpitel Prizeman in 1915.]

John William Burrows, elected Licentiate, 1910.

Lionel Littlewood, elected Licentiate, 1912.

Herbert Quinton, elected Licentiate, 1911

R.I.B.A. Maintenance Scholarships in Architecture.

The Maintenance Scholarships Committee announce that they have received a contribution of five guineas from the Nottingham and Derby Architectural Society towards the Maintenance Scholarships Fund.

R.I.B.A. Prizes and Studentships.

The Tite Prize, the Soane Medallion, and the Victory Scholarship.

The Board of Architectural Education draw attention to the fact that since the scheme for the R.I.B.A. prizes and studentships was modified, the following entries have been received each year for the respective prizes :—

The Tite Prize.—1925-1926, 41; 1926-1927, 64; 1927-1928, 114.

The Soane Medallion.—1925-1926, 13; 1927-1928, 25.

The Victory Scholarship.—1926-1927, 18.

R.I.B.A. Working Drawings.

An Exhibition of R.I.B.A. working drawings is on view at the School of Architecture, Liverpool, until Friday, May 27.

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ILLUSTRATIONS

New Parliament Building for the Government of Northern Ireland.

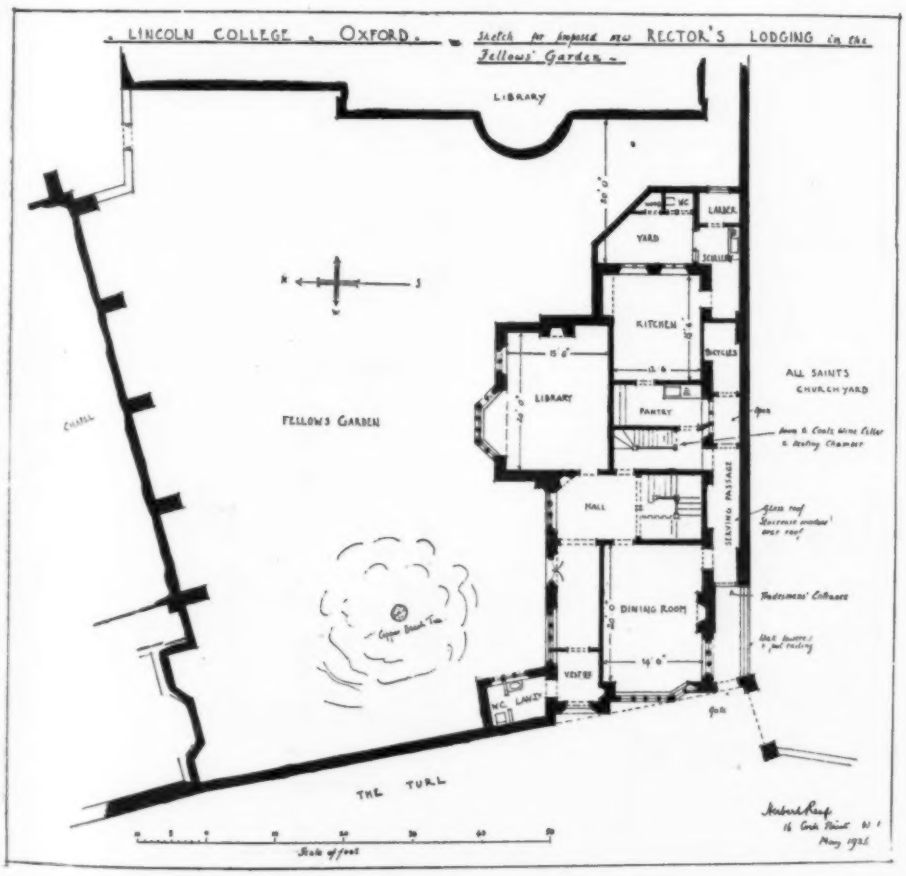
The site for this building, which is now in course of erection, is situated about three miles from the centre of Belfast, and is known as the Stormont Castle Estate, on which is the residence of Viscount Craigavon, the Prime Minister. In close proximity is also the Speaker's house, recently completed from designs by Messrs. Knott & Collins. The original proposal was to make the Parliament House the central feature of a group of three buildings, the other two accommodating the Departmental Government staffs. This project has, however, now been abandoned, and the offices in question are now incorporated in the Parliament building. This has entailed the preparation of an entirely new design, so arranged that the foundations of the original project, which were in position before the change of programme was decided upon, could be again utilised. It will be seen that the central dome, which formed such a marked feature in the original conception, has, for reasons of economy, now been omitted.

The building is to contain two chambers arranged on the same general lines as at the Houses of Parliament at Westminster, the portion west of the large Central Hall containing the House of Commons, and the Senate occupying the eastern portion. The building is placed about three-quarters of a mile from the main road and is approached by a wide processional roadway on an upward gradient, the terrace at the foot of the wide flight of approach steps being about 165 ft. above the main-road level. The building itself is 365 ft. long and 164 ft. deep, the height being 70 ft. above its surrounding pavement, and will be faced with Portland stone on a plinth of Irish (Slieve Donnard) grey granite.

The architect is Mr. Arnold Thornely, F.R.I.B.A., of Liverpool.

Lincoln College, Oxford.

Lincoln College owns the freehold of the land on the west side of the Turl from Market-street to the High-street, and it is proposed that a block of buildings shall be erected on a site which includes the stable-yard at the corner of Market-street and the Turl, the old lecture-room behind, and the two adjoining houses with shops under in the Turl. Mr. Herbert Read, F.R.I.B.A., of 16, Cork-street, W.1, the architect to the college, who designed the building which now houses the senior and junior libraries of the college, has prepared the plans and elevations of the suggested buildings which we illustrate this week. These would furnish the college with 27 additional sets of rooms, and so raise the number of lodgings available for undergraduates in college from 57 to 84, which would entirely meet the needs of the college in this respect. The site at present occupied by Hedderley's shop on the ground floor and the Rector's Lodgings above is required for the complete scheme for 27 sets of rooms, and it is for this reason that the provision of another house for the Rector is a necessary part of the complete scheme. It is therefore proposed to erect a suitable house for the Rector in that part of the Fellows' Garden nearest to All Saints' Church, and elevations of this proposed house to the Turl, and to the garden, accompany the plans and elevations of the other buildings. The cost of the whole scheme is estimated by the architect at £43,000.



Lincoln College, Oxford: Proposed Buildings.

MR. HERBERT READ, F.R.I.B.A., Architect.

House at Chalfont.

This is a preliminary design for a house which has been built to a rather different plan and elevation. The general contractors are Messrs. H. G. Cooper, Ltd., and the work has been carried out under the superintendence of the architect, Mr. Hubert Lidbetter, F.R.I.B.A.

Competition for New Offices for the Wiltshire Working Men's Conservative Benefit Society.

The full awards in this competition are given on page 802. The main conditions which governed the first premiated design were that the general offices had to be capable of supervision from any point, especially from the Assistant Secretary's office, and that the public were only to have access to the enquiry counter and the cashier's office. The side portions of the general office are kept low, and the central portion is taken up to allow for clerestory lighting. The various departments are divided by means of glazed partitions extending to the ceiling. On the first floor the board room is placed over the central portion of the general office, thus obtaining lighting from three sides, and more freedom from street noises than had it been placed on the main front of the building. The caretaker's quarters are divided between the first and second floors to utilise roof space.

Messrs. Lander and Tanner, AA.R.I.B.A., are the successful architects. The elevations are in coursed ashlar of local stone with a steeply pitched roof, and have been kept as simple as possible, as it was not desired to incur unnecessary expense.

Royal Society of Arts.

The work of refacing the rear wall of the premises of the Royal Society of Arts in Durham House-street, Strand, has been carried out from the designs of Sir Aston Webb and Son. The cost of decorating the wall has been borne by Sir George Sutton, a vice-president.

Messrs. E. J. & A. T. Bradford were responsible for the new elevation. They modelled the enrichment in stucco to represent stone fixed on the old stone walls. They specially modelled the three figure panels, "Music," "Painting," and "Education." Messrs. Dove Brothers were responsible for scaffolding and builders' work.

Raffles College, Singapore: Administration Block.

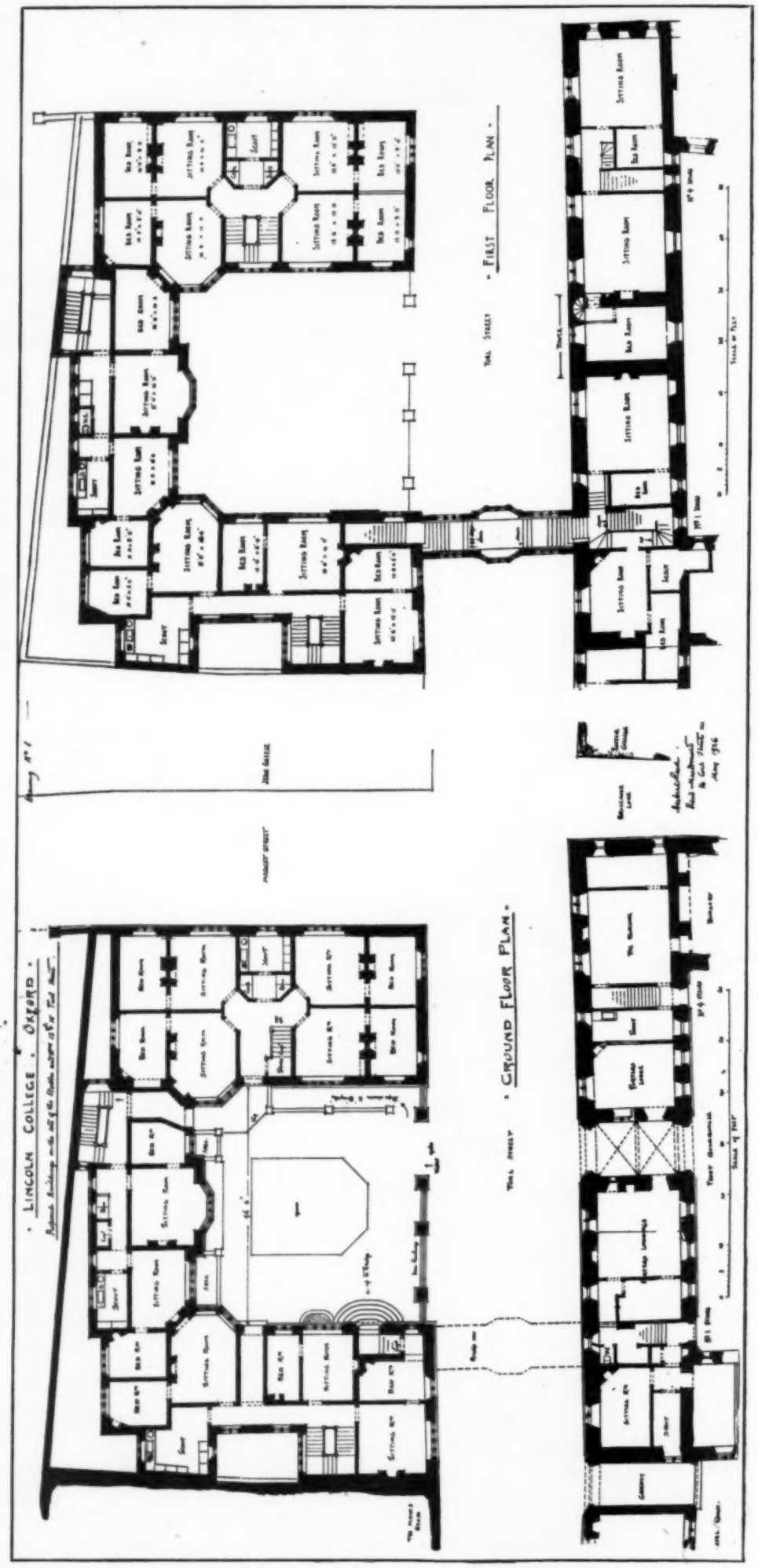
This block is entered off a porte cochère, off which open the administrative offices. The staircase on the axial line opposite the porte cochère leads to the great hall on the first floor, which is about 112 ft. by 52 ft. by 44 ft. to the crown of the barrel vaulting. A library will be housed at the gallery level.

Messrs. Cyril A. Farey, A.R.I.B.A., and Graham R. Dawbarn, M.A., A.R.I.B.A., M.I.Struct.E., are the associated architects; and Messrs. Swan and MacLaren, of Singapore, the supervising architects.

The general contractors are Messrs. Wee Tiam Ghee. Among the sub-contractors are: Messrs. Redpath, Brown and Co., constructional steelwork; British Reinforced Concrete Engineering Co., Ltd., reinforcement; Messrs. Jenkins (Torquay), marble paving.

A House at Chislehurst.

"Hoblands," Chislehurst, Kent, is a fair-sized country house of Georgian character. Mr. Fred Harrild, F.R.I.B.A., being the architect.



Lincoln College, Oxford: Proposed Buildings.

Mr. Herbert Read, F.R.I.B.A., Architect.

UNIV. OF MICH.

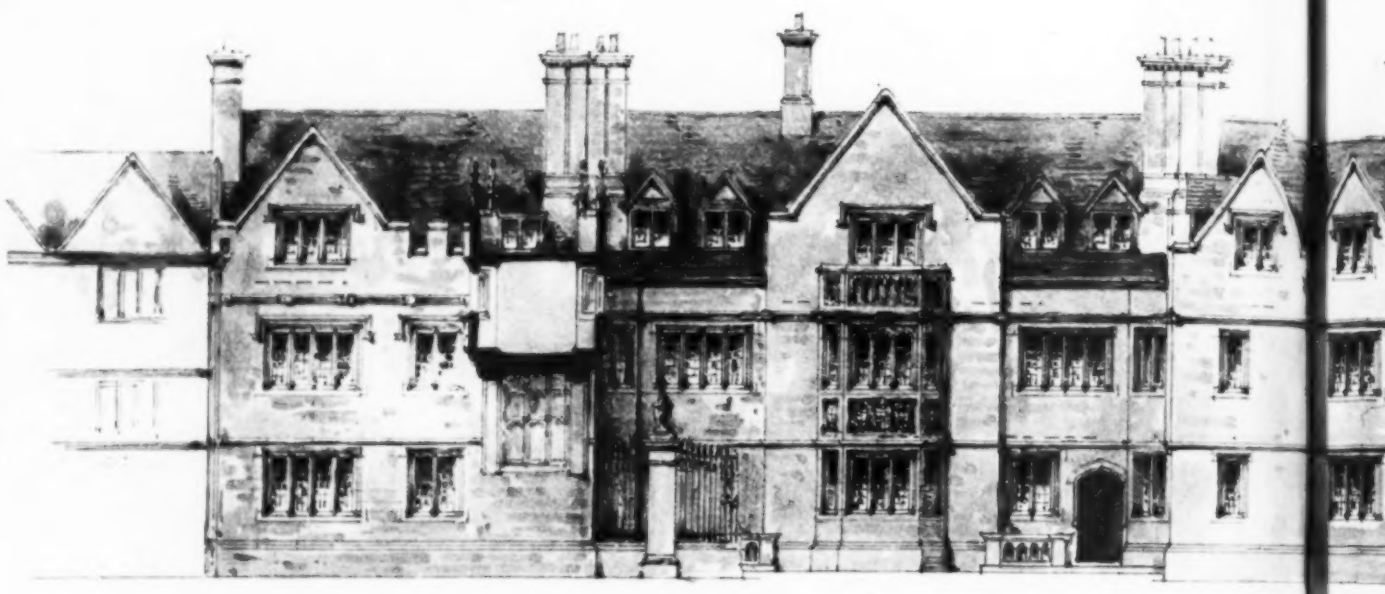
Northern Ireland Parliament Building, Belfast.

MR. ARNOLD THORNELY, F.R.I.B.A., Architect.

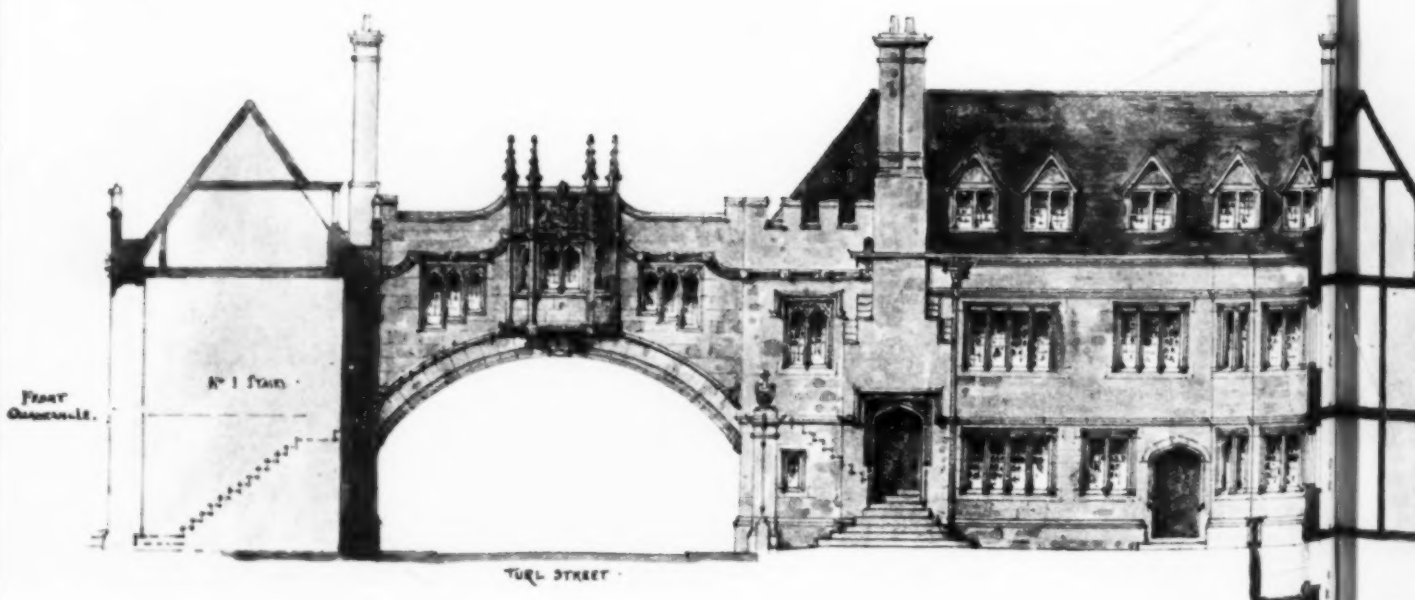
UNIV. OF MICH.

LINCOLN COLLEGE, OXFORD

Proposed Buildings on the Site of the Stables and Nos 13 & 15 Turl Street.



TURL & QUADRANGLE ELEVATION

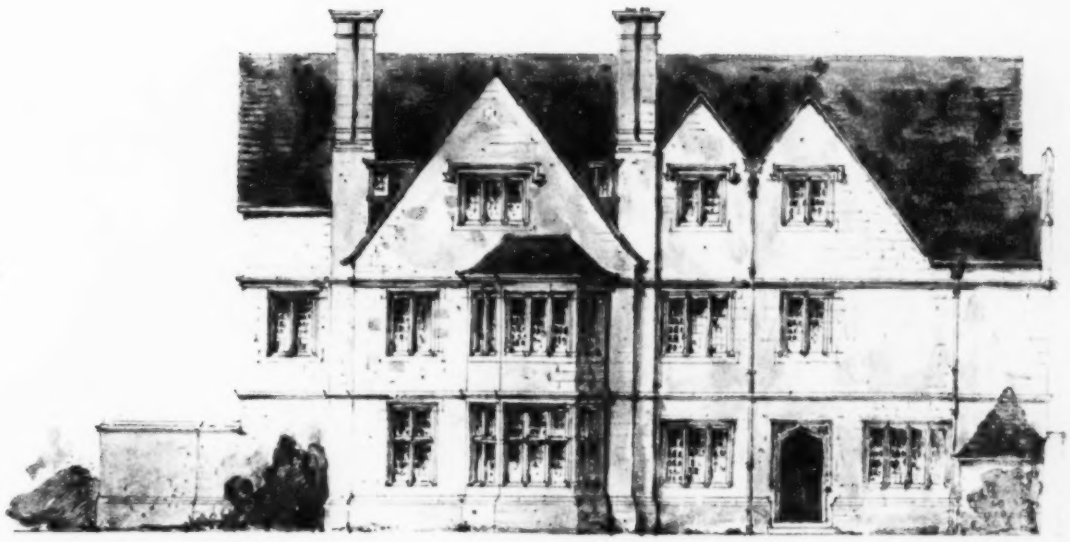


SCALE OF FEET

LINCOLN COLLEGE … : PROP…
Mr. Herbert … R.I.B.A.

Exeter College, Oxford. — Proposed New Rector's Lodgings.

Elevation towards the Turl.



Elevation towards the Fellows' Garden.

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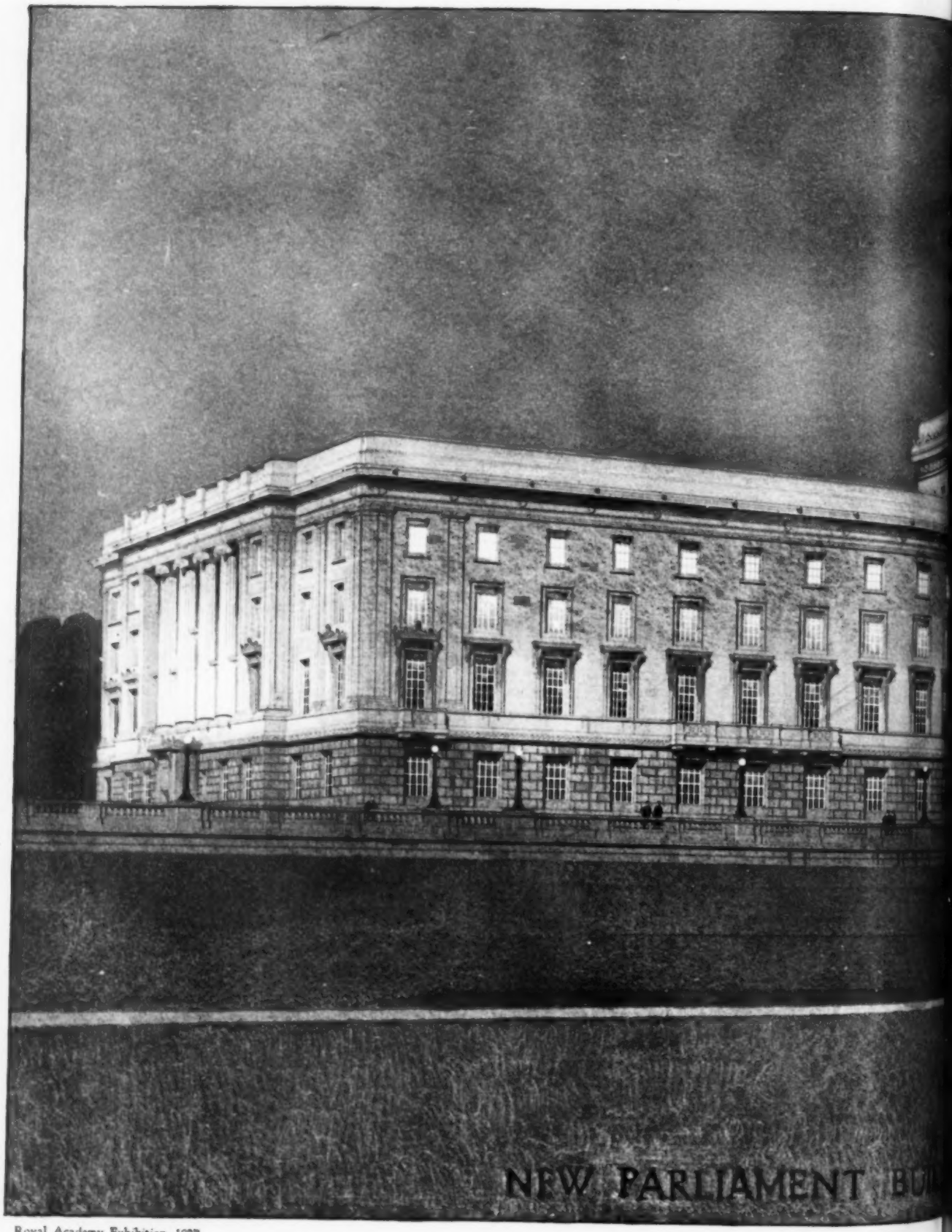
Scale of Feet

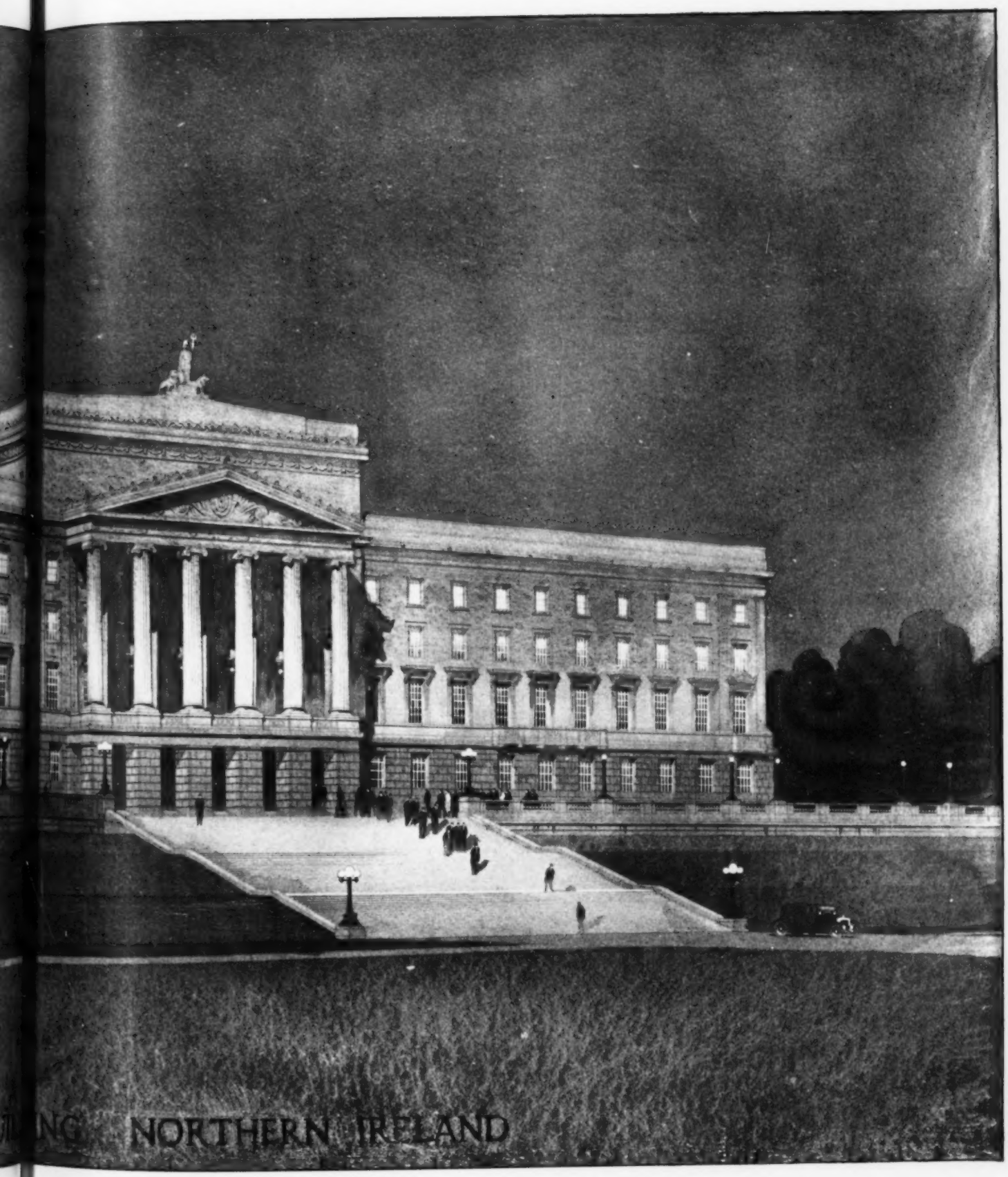
Herman Reade, Architect.
16 Cook Street, Oxford.
May, 1926.

: PROPOSED BUILDINGS.
R.I.B.A., Architect.



Royal Academy Exhibition, 1927.

NORTHERN REA PARLIAM
Mr. Arnol nely, F.



PARLIAMENT BUILDING, BELFAST.
mely, F.R.I.B.A., Architect.

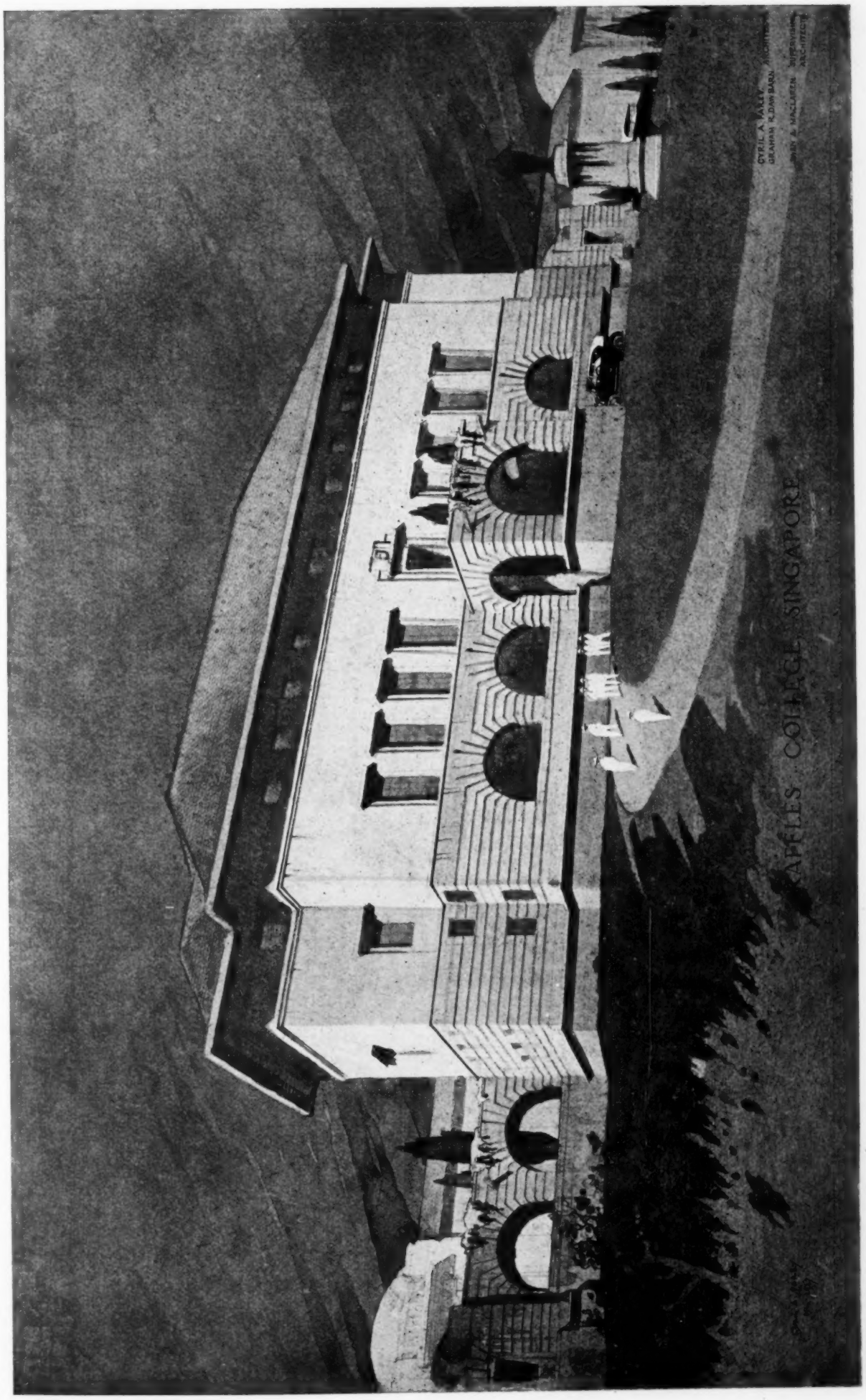
UNIV OF MICH

ROYAL ACADEMY EXHIBITION, 1927.

MESSRS. FAREY & DAWBARN, AA.R.I.B.A., Architects.

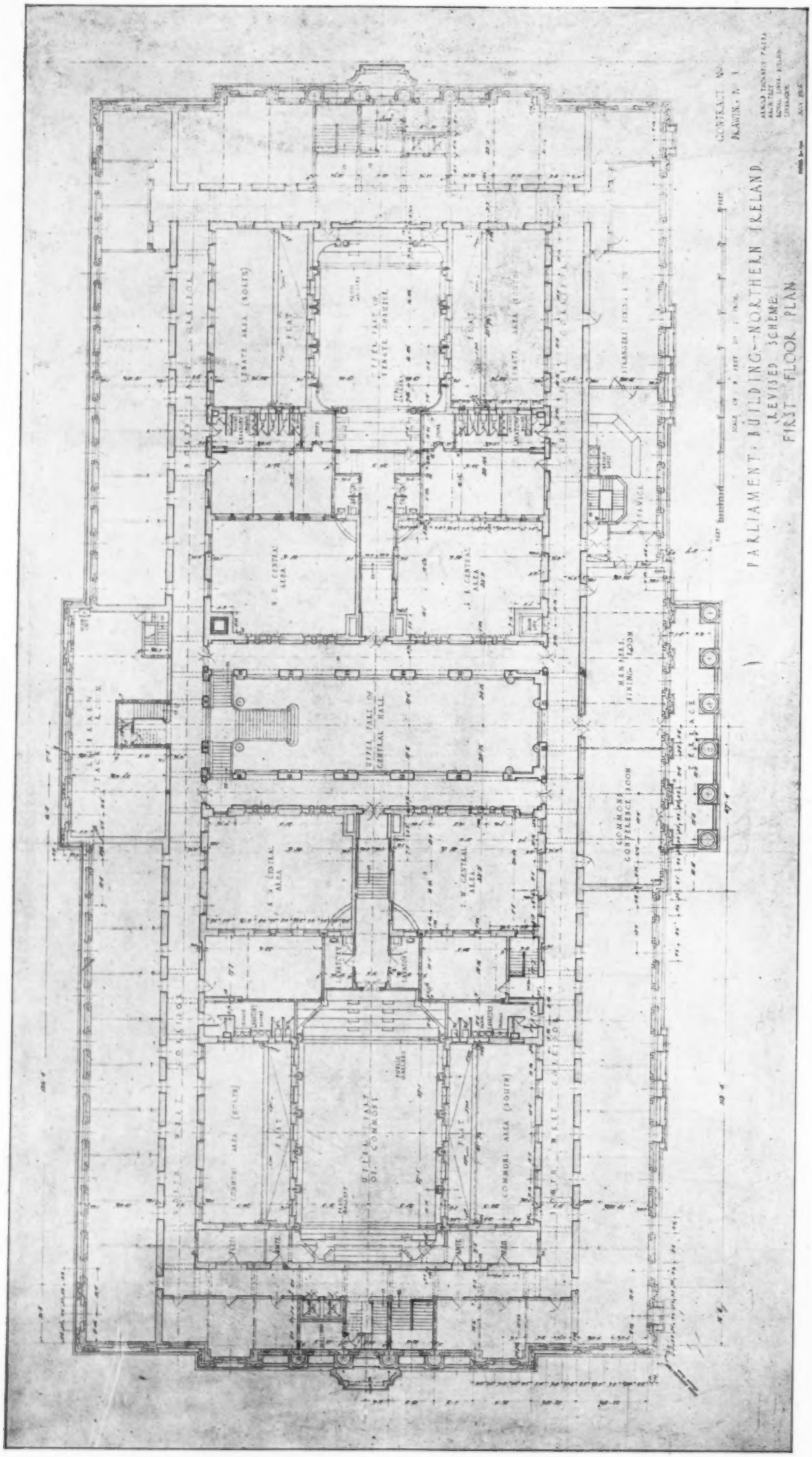
MESSRS. SWAN & MACLAREN, Supervising Architects.

UNIV. OF MICH.



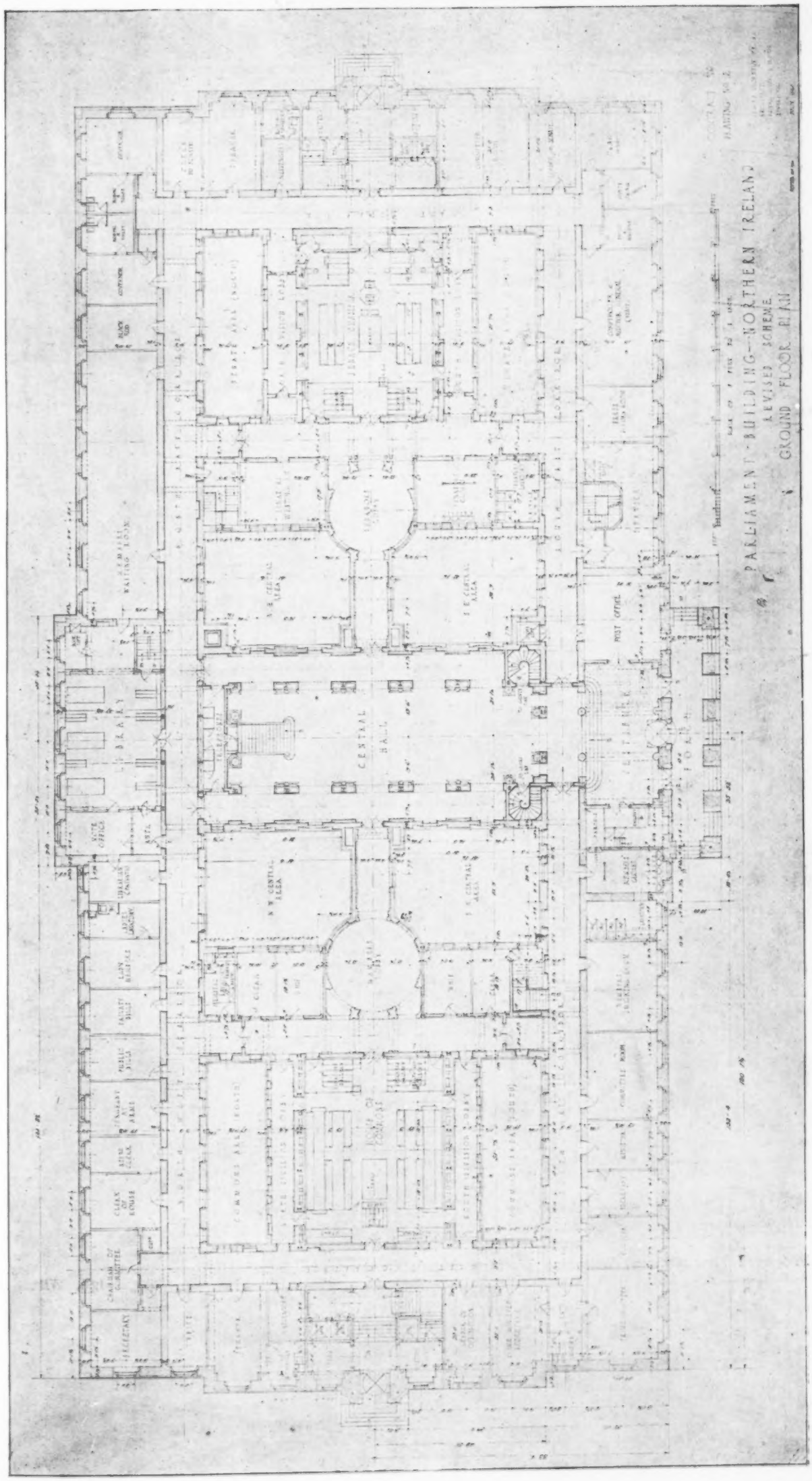
Royal Academy Exhibition, 1927.

Messrs Farey & Dawbarn, AA.R.I.B.A., Architects. Messrs. Swan & Maclaren, Supervising Architects.



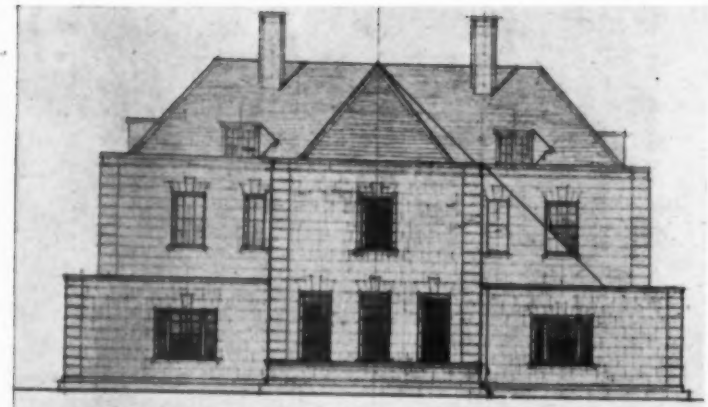
Northern Ireland Parliament Building, Belfast.

Mr. Arnold Thornely, F.R.I.B.A., Architect.

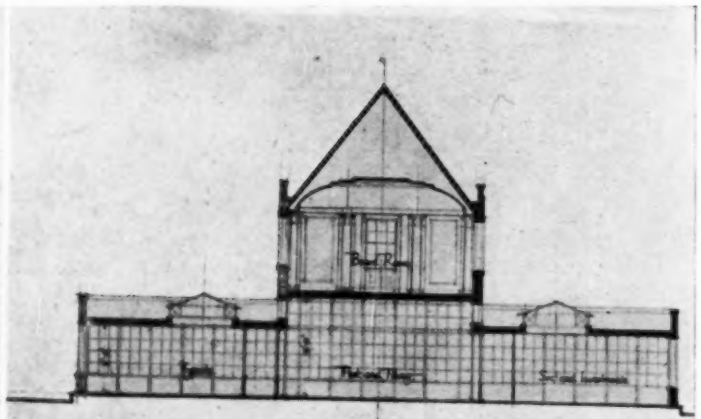


Northern reland Parliament Building, Belfast.

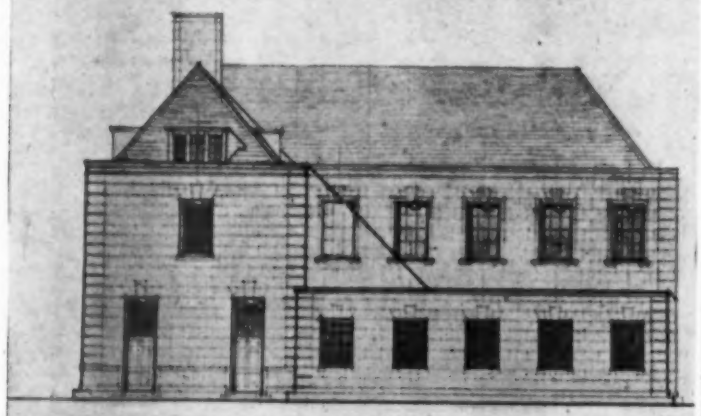
Mr. Arnold Thornely, F.R.I.B.A., Architect.



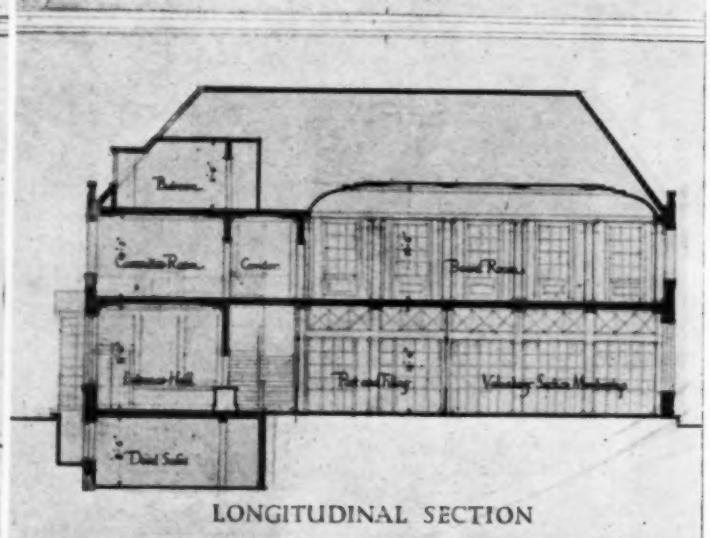
WEST ELEVATION.



CROSS SECTION.

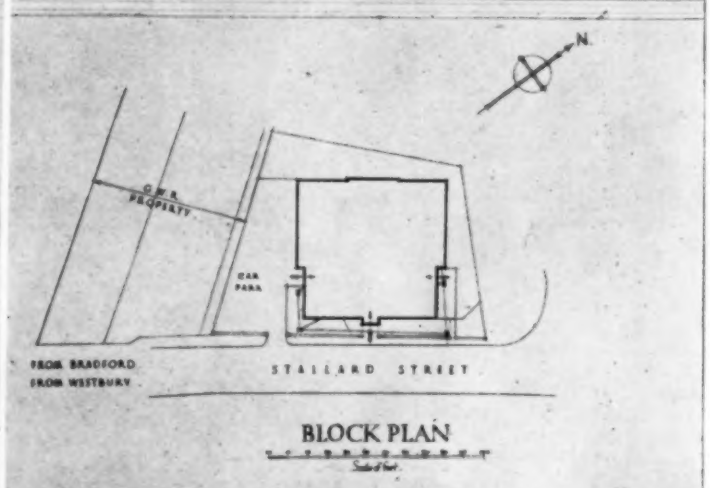


NORTH ELEVATION.



LONGITUDINAL SECTION

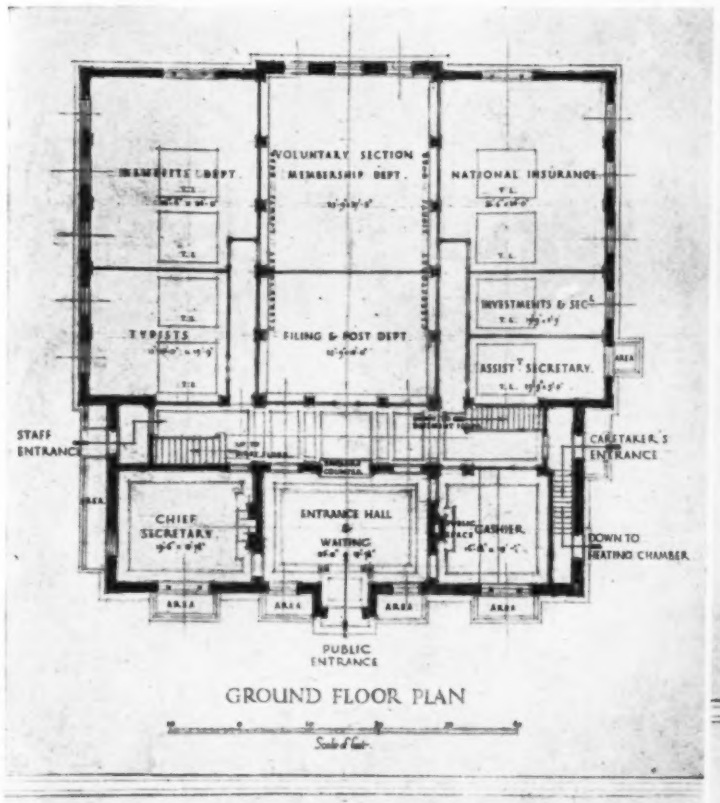
ELEVATION TO STALLARD STREET.



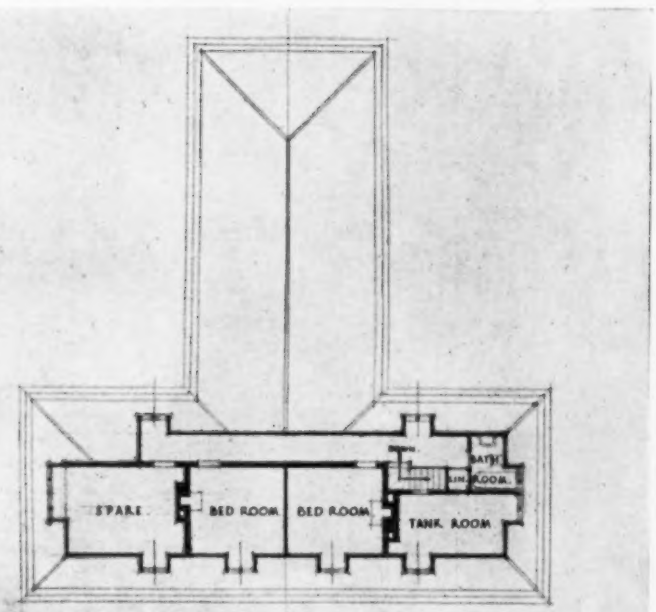
BLOCK PLAN

Proposed New Offices, Wiltshire Working Men's Conservative Benefit Society, Trowbridge, Wilts.
First Premiated Design.

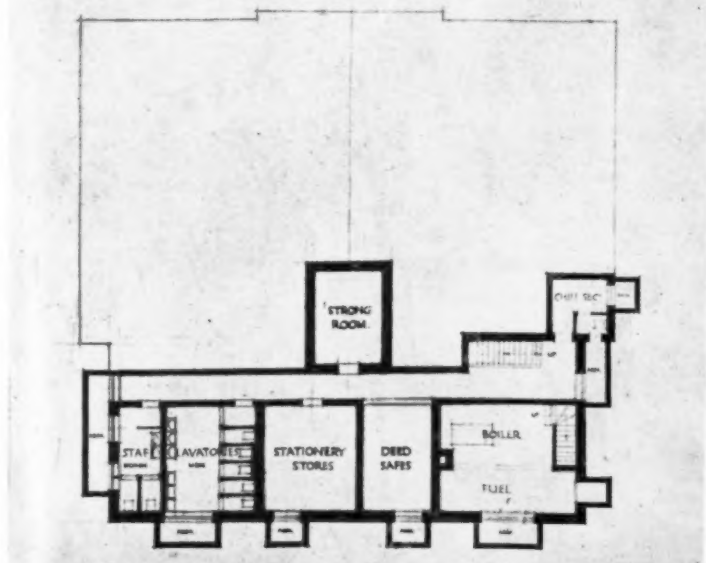
Messrs. F. J. Lander and E. A. D. Tanner, AA.R.I.B.A., Architects.



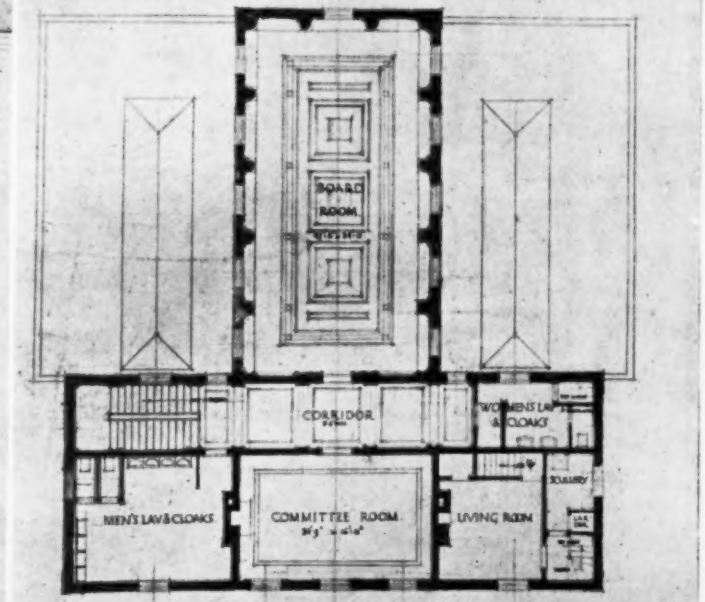
GROUND FLOOR PLAN



SECOND FLOOR PLAN



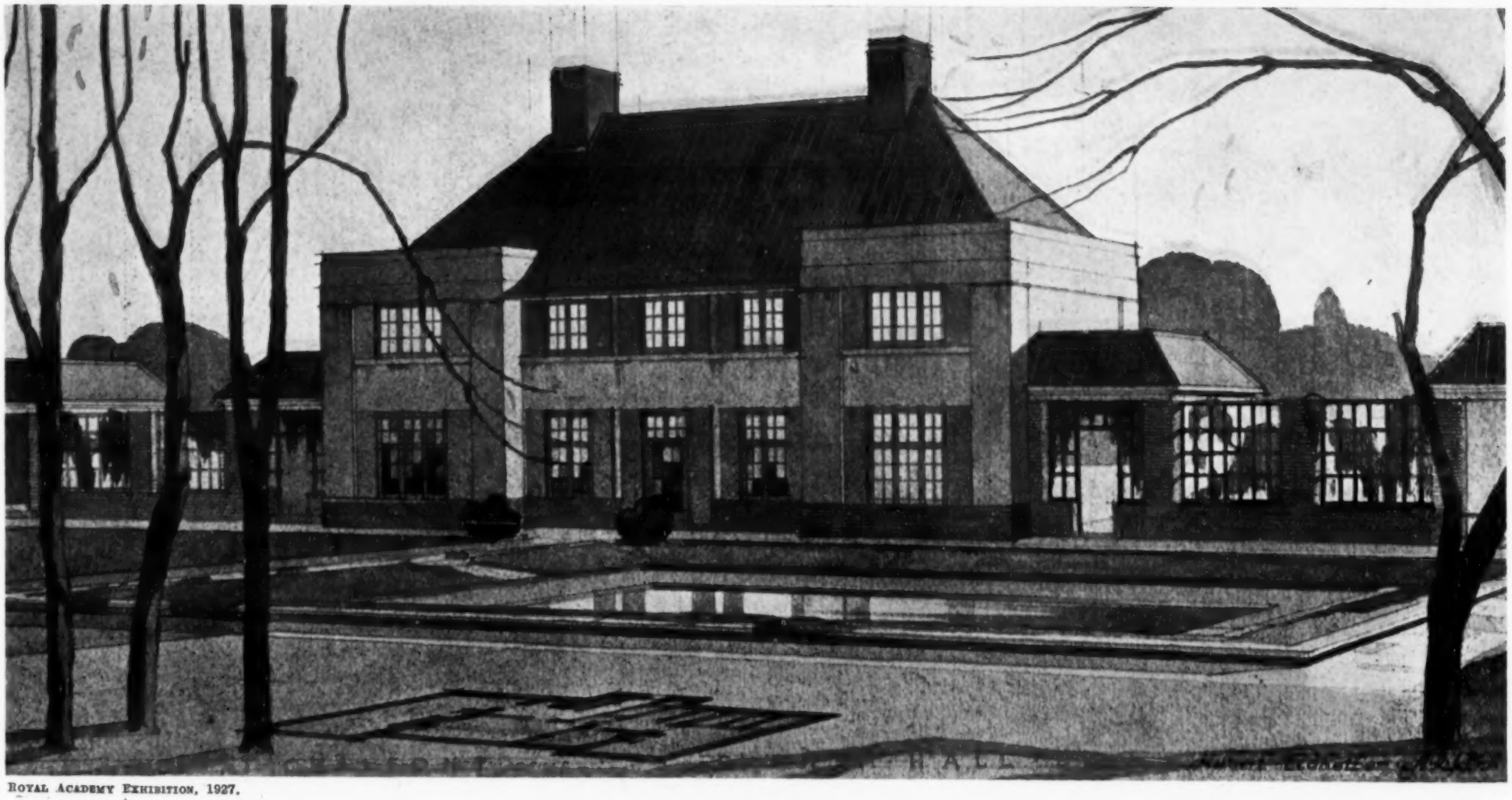
BASEMENT PLAN



FIRST FLOOR PLAN

Proposed New Offices, Wiltshire Working Men's Conservative Benefit Society, Trowbridge, Wilts.
First Premiated Design.

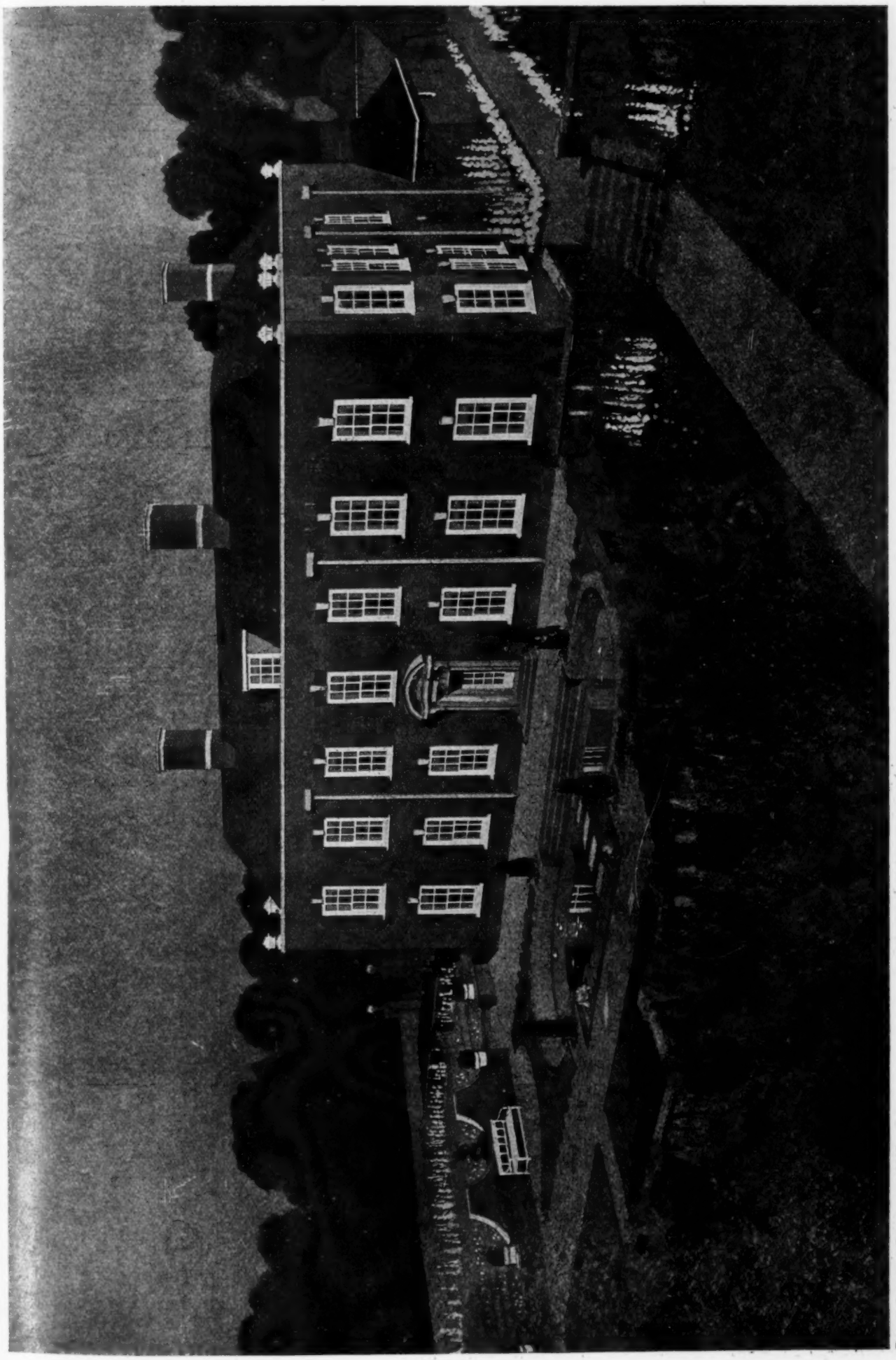
Messrs. F. J. Lander and E. A. D. Tanner, AA.R.I.B.A., Architects.



ROYAL ACADEMY EXHIBITION, 1927.

House at Chalfont.

MR. HUBERT LIDBETTER, A.R.I.B.A., Architect.



"Hoblands," Chislehurst, Kent.
Mr. Fred Harbild, F.R.I.B.A., Architect

Royal Academy Exhibition, 1927.

THE REGISTRATION BILL IN PARLIAMENT

The first meeting of the Select Committee appointed to consider the Architects (Registration) Bill was held at the House of Commons on Thursday last week, Sir C. Kinloch-Cooke presided, and the other members were:—Mr. Gardner, Sir Alfred Hopkinson, Mr. Lindley, Sir Murdoch Macdonald, Colonel Moore, Sir Frederick Rice, Mr. Tasker, Mr. Viant, Captain Wallace, and Dr. Watts.

Evidence was given on behalf of the Royal Institute of British Architects by Major Harry Barnes, the Chairman of the Registration Committee of the Institute. Major Barnes told the Committee that he was authorised by the Institute to say that, in accordance with the undertaking given on their behalf during the second reading of the Bill in the House of Commons, they were prepared to qualify the term "architect" as used in the Bill. It was only natural that they did so with considerable reluctance. Words such as "authorised," "recognised," and "statutory" had been suggested by members of the Institute, but they considered that it was impossible to find one to which less objection would be taken than the word "registered." The use of the word "registered" as a qualification would appear to remove all the opposition to the Bill, and would have the effect of changing the register from a compulsory register to a voluntary register. As the Bill stood, persons were considered to be registered who were entitled to be registered, and it might have the effect of putting on the register persons who did not desire to be put on. It was, therefore, proposed that persons desiring to be put on the register should have to make application, so that no one would be put on against his will. The adoption of the term "registered architect" would remove the fear expressed on behalf of local authorities that the Bill would interfere with their officials; it would remove the apprehension of the civil engineers that they would not be allowed to use freely and unrestricted the term "architect" in connection with their work; and it would also remove the apprehensions of the co-operative societies that, by placing a restriction on the use of the word "architect," the Bill would interfere with certain departments of their work.

A number of amendments consequential on the adoption of the term "registered architect" had become necessary. In addition to these, the Institute had prepared other amendments for the consideration of the Committee. It was proposed to amend the clause relating to the Admission Committee for the regulation of entry to the register. Several applications had been made by bodies not at present included in the schedule laying down the constitution of the Admission Committee, and it was proposed to add the names of the National Association of Auctioneers, House Agents, Rating Surveyors and Valuers, the Land Agents' Society, and the Faculty of Architects and Surveyors.

The Chairman said he noticed that it was proposed to take Northern Ireland out of the Bill.

Major Barnes: The architects of Northern Ireland wish to have conditions of registration adapted to their own position, and it has not been found possible, within the range of the Bill, to make such modifications as they desire. Consequently, it is suggested that Northern Ireland should be left out of the Bill in order that they may proceed with a measure of their own.

Going on to deal with other amendments proposed by the Institute, Major Barnes said it was felt that, as registration was not to be compulsory, a fee might be charged. The disciplinary powers provided under the Bill would, of course, only apply to members on the register. In connection with the constitution of the Board of Architectural Education, provided for in the first schedule to the Bill, it was proposed that, instead of three representatives being nominated by the National Association of Art Masters, two should be nominated by the Association of Technical Institutions and one by the National Association of Art Masters. The Faculty of Architects and Surveyors and the National Federation of Building Trades Operatives were to be added to the Board.

Witness next explained the part taken by the Institute in drawing up the Bill. The Council of the Institute was entrusted with setting up the register. The Admission Committee would control the entrance of all men at present in practice, or assistants or students. The Board of Architectural Education would control those who might become students after the passing of the Act. The Discipline Committee would control removal from the register. In framing the Bill, regard had been had to the fact that there were men at present in practice who were members of bodies other than the Institute, and steps had been taken to insure that the admission of such persons should be as free and open as in the case of any other person. The Admission Committee was, therefore, made up of representatives of every body from whose representatives admission was likely to be sought. The Board of Architectural Education had been constructed on the general principle that the profession should be open to all classes and that it should be possible to enter the profession from any level of society, and that a standard of educational value should be set up. It would represent every educational stage.

A member of the Committee asked whether there was to be any representative of the Workers' Educational Association.

Major Barnes: That is not at present provided for in the Bill. Reference was made to that body during the second reading debate, and it will be entirely in keeping with the views of the Institutes if such a representative is appointed.

The machinery for the removal of members from the register, the witness continued, was set up on the principles followed in other professions. It was proposed to safeguard the position of every one on the register by making the Discipline Committee contain not only a number of his peers but also persons entirely apart from the profession. There would be three registered persons and two others, one appointed by the Minister of Health (who might be regarded as a representative of the general body of citizens), and the other appointed by the President of the Law Society (who might be regarded as a representative to see that the case had a proper hearing). The witness also explained to the Committee the constitution of the Institute and the precedents existing in other professions for placing registration in the hands of such a body.

Mr. Tasker asked witness whether the Institute had ever done anything to help the designing of steel-framed buildings.

Major Barnes said that such work did not fall on the Institute as a body, but was a question for individual members. He could not, he added, be expected to be familiar with the detailed working of the Institute.

Replying to a further question by Mr. Tasker, witness said that he was not aware of any matter having come before the Council which could be considered as bringing to their notice questions of neglect on the part of District Surveyors.

Mr. Tasker: Did not your Institute on one occasion instruct learned counsel in connection with a Bill where the use of ferro-concrete was involved?

Major Barnes said that the Institute acted together with other bodies on that occasion, and succeeded in getting a substantial concession in the matter.

The Chairman suggested that these matters did not affect the Bill under discussion and that Mr. Tasker was not entitled, during the course of examining the witness, to attack the Institute.

Mr. Tasker said the Bill was designed to exclude civil engineers and other professions from carrying out architectural work, and in their interests he must put questions as to the attitude of the Institute towards them.

The Chairman said that any such body as the civil engineers could come forward and give evidence on that subject if they chose, and it would be more appropriate to address such questions to them.

Mr. Tasker said he had no desire to attack the Institute.

After some further discussion between members of the committee as to whether it was desirable that questions relating to the detailed work of the Science Committee of the Institute should be addressed to witness, it was finally agreed that the points which Mr. Tasker wished to raise should be handed to Major Barnes in writing and an opportunity given at a later sitting for the considered answers to be discussed.

Mr. Tasker then put to witness questions relating to the general purposes of the Bill and asked whether it were not one of the principal objects of the Bill to eliminate men who had no training whatever.

Major Barnes: The present generation, you might roughly say, are not affected by the Bill. It is more for the benefit of future generations.

Answering Captain Wallace, Major Barnes said that, although they would prefer the word "chartered" to "registered," he did not think it could be put in the Bill because there would be the difficulty of persons who were members of the Institute having the right to be called "chartered" by reason of their membership of the Institute which held a charter, and at the same time prevented from calling themselves chartered by reason of the Bill.

The Committee adjourned.

TOWN PLANNING IN ENGLAND AND WALES

We have received from the Town-Planning Department of the Ministry of Health a List of Local Authorities engaged in the preparation of town-planning schemes, showing the stage reached in each case. Analysis of this list provides the following information:—

359 local authorities have passed a resolution deciding to prepare a scheme, or received the Minister's approval or authority, where required, but no Preliminary Statement or Scheme has yet been approved by the Minister.

In 59 cases the Preliminary Statement of proposals for development has been submitted but has not yet been approved by the Minister.

In 66 cases the Preliminary Statement has been approved by the Minister.

In 11 cases the Scheme itself has been submitted but has not yet been approved by the Minister.

In 23 cases the Scheme has been finally approved by the Minister and become operative.

In 120 cases the Authority themselves are not preparing a Scheme, but a portion of their district is included in the area of a Scheme being prepared by another Authority, the name of which is shown in brackets.

The following statement of town planning progress in England and Wales for the month ended April 30th, 1927, is issued by the Town Planning Department of the Ministry of Health:—

Preliminary Statements approved (Stage BB).—Devonshire: Totnes T.C. Surrey: Epsom R.D.C. (Cheam), Epsom R.D.C. (Banstead and Woodmansterne).

Preliminary Statement submitted (Stage B).—Essex: Harwich T.C.

Resolutions received (Stage A).—Hertford: Watford T.C. Sussex: Bexhill T.C.

SOCIETIES AND INSTITUTIONS

ROYAL SCHOOL OF ENGINEERING, GIZA, CAIRO, SOCIETY OF ARCHITECTS

The inaugural meeting of the Society of Architects attached to the Royal School of Engineering, Giza, Cairo, was held on April 14th, when the presidential address was read by Professor A. F. Wickenden, F.R.I.B.A. Opening his paper, the president said it seemed to him that the training of architects presented a much more difficult problem than the training of men for any other profession, the reason being that it was so difficult to find a sure foundation or basis upon which to work. There were so many different opinions as to what was really meant by architecture. He was one of those who were strongly of opinion that architecture must be considered in very close relationship to building construction, because the ultimate aim of every architect should be, and surely was, to produce not merely a series of designs and drawings but actual buildings. If it was so troublesome to find a clearly defined idea as to what constituted architecture, it followed that it must be equally difficult to state the essential qualifications of an architect, and that, in his experience, was the great trouble of an architectural student. It meant that in most cases he did not know exactly what he was aiming at, and in consequence was in great danger of ending his period of training as a very commonplace artist with a most incomplete knowledge of science.

The requirements of an architect varied considerably according to the different practices and methods adopted in the particular country or locality in which he happened to work. In one place, for example, the architect might have to design and be responsible for the supervision of the construction of the building from foundations to roof, and everything connected with the building, while in other places he might, perhaps, do very little more than make the best of a structural engineer's plan and design an elevation to fit an engineering framework.

The speaker then briefly suggested a few characteristics which, in his opinion, were necessary to enable a person to be really successful in the practice of architecture. He thought we must place first "imagination," the creative faculty of the mind, for unless a man possessed, or was able to develop power of imagination, he would never produce any original architectural work of great merit, except, perhaps, in rare cases by accident.

The speaker next grouped together an artistic temperament, a scientific mind, and a live interest in craftsmanship; an artistic temperament, which compelled a full appreciation of beauty of form and colour; a scientific mind, which demanded the logical testing of theory; first-hand knowledge of the handiwork in the various crafts, which translated the creations of the mind into realities. Next he would place unbounded ambition and undying enthusiasm; the continual desire to produce something or to do something better than one had ever produced or accomplished before, and that spirit of enthusiasm which enabled one to remain keen and carry on in spite of disappointment. The practice of architecture was full of disappointments. A true artist was nearly always disappointed, to some extent, with the finished results of his work. He strongly urged his hearers to take full advantage of enthusiasm while it was strongest, in the early years of their careers. Last, but not least in importance, he specified practical business ability, which should make the architect realise that his building scheme or proposal must not only be structurally sound but also financially sound. If architects were to develop their business abilities to a greater extent, a much greater value would be placed upon their services by the general public.

While it might, perhaps, be comparatively easy to be an architect in part, it was extremely difficult to be a complete architect, and to accomplish such a feat meant a long and careful period of training and a lifetime of practice.

The fact that there was so much that a student could do, and ought to do during his period of training, made it absolutely necessary that there should not be too much time and energy spent on matters of minor importance. In the training of architectural students one of the greatest dangers of wastage always had been, and he supposed always would be, in the matter of draughtsmanship. In his student days he was most enthusiastic over good drawing and rendering, and he still fully appreciated their very great value, especially in the early years of training. Beyond a certain reasonable point, however, during the later years of studentship, drawing and rendering might very easily become sheer waste of time, energy, and drawing materials. Students should learn to use discretion as to when elaborate draughtsmanship was necessary and when it was not.

Another source of danger to which architectural students were, in his opinion, exposed was that of becoming too theoretically minded in dealing with design and composition. The safe and useful rules governing architectural design were comparatively few in number, but the vague theories and ever-changing individual opinions were unlimited in number. Once they had mastered the few fundamental principles he advised them to learn to think for themselves and not be afraid of being original. By doing this they would have many failures, they would meet with much violent criticism, especially from brother architects, but if they achieved only one real success in life they would not have lived in vain.

AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE.

At a Council Meeting of the Auctioneers' and Estate Agents' Institute at the Institute, Lincoln's Inn Fields, Mr. Alfred J. Burrows (Messrs. Knight, Frank & Rutley), of London and Ashford, has been unanimously elected President for the ensuing year. The following Vice-Presidents have been also elected: Messrs. Hubert Alexander (Messrs. Stephenson & Alexander), Cardiff; Arthur C. Driver (Messrs. Drivers, Jonas & Co.), London; C. Roland Field (Messrs. Field & Sons), London; J. Edward Kitchen (Messrs. Oliver, Appleton & Kitchen), Leeds; Geo. F. Page, J.P. (Messrs. Nightingale, Page & Bennett), Kingston-on-Thames; Sir Anker Simmons, K.B.E., J.P., Henley-on-Thames.

There were 1,039 entries for this Institute's Examinations last March, of whom 618 have passed, being eight in the Direct Final Division, 182 Final Division, 325 Intermediate Division, and 102 Preliminary Division.

INSTITUTION OF CIVIL ENGINEERS.

The Council of the Institution of Civil Engineers have made the following awards in respect of papers read and discussed at the ordinary meetings during the session 1926-27:—

Telford Gold Medals to Mr. I. J. Jones, M.Inst.C.E. (London), and Mr. T. B. Hunter, O.B.E., M.Inst.C.E. (London); a Watt Gold Medal to Mr. Gerald Curry, M.Inst.C.E. (London); and a George Stephenson Gold Medal to Mr. A. L. Bell, M.Sc., B.A., M.Inst.C.E. (Malta); Telford Premiums to Mr. A. W. Stonebridge, M.Inst.C.E. (Bombay); Mr. P. R. Roberts (Barrow-in-Furness); Mr. A. C. Anderson, O.B.E., M.Inst.C.E. (London), and Mr. George Ellson, O.B.E., M.Inst.C.E. (London); a Manby Premium to Professor Douglas Hay, M.C., B.Sc., M.Inst.C.E. (Sheffield); and a Trevithick Premium to Mr. Powys Davies, Assoc.M.Inst.C.E. (India).

At the Annual General Meeting of the Institution of Civil Engineers held on Tuesday evening, May 10, the result of the ballot for the election of officers was declared as follows:—

President: Mr. Ernest Frederic Crosbie Trench, C.B.E., M.A., B.A.I. (London).

Vice-Presidents: Sir Archibald Denny, Bart. (London); Sir Brodie Haldane Henderson, K.C.M.G., C.B. (London); Sir John Francis Cleverton Snell, G.B.E. (London); Mr. George William Humphreys, C.B.E. (London).

Other members of Council: Mr. Robert Donald Thain Alexander, D.S.O., O.B.E. (India); Mr. Henry Newmarch Aliott (Manchester); Mr. Thomas Henry Bailey (Wokingham); Mr. William James Eames Binnie, M.A. (London); Sir Dugald Clerk, K.B.E., D.Sc., F.R.S. (London); Col. Rookes Evelyn Bell Crompton, C.B., Col. R.E. (T.) (London); Professor William Ernest Dalby, M.A., B.Sc., F.R.S. (London); Mr. Sydney Bryan Donkin (London); Sir Alexander Gibb, G.B.E., C.B. (London); Mr. William Wylie Grierson, C.B.E. (Ticehurst); Sir Robert Abbott Hadfield, Bart., D.Sc., D.Met., F.R.S. (London); Mr. Ernest Prescot Hill (London); Sir Clement Daniel Maggs Hindley, M.A. (India); Mr. Thomas William Keele (Australia); Sir Cyril Reginald Sutton Kirkpatrick (London); Mr. David Ernest Lloyd-Davies (South Africa); Sir Murdoch MacDonald, K.C.M.G., C.B., M.P. (London); Sir Henry Percy Maybury, K.C.M.G., C.B. (London); Sir Richard Augustine Studdert Redmayne, K.C.B., M.Sc. (London); Mr. Henry Ashman Reed (Manchester); Sir Hugh Reid, Bart., C.B.E., LL.D. (Glasgow); Professor Robert Julian Scott (New Zealand); Mr. William Archer Porter Tait, B.Sc. (Edinburgh); Mr. Henry Hague Vaughan (Canada); Mr. John Duncan Watson (Birmingham); Sir Alfred Fernandez Yarrow, Bart., F.R.S. (London).

This Council will take office on the first Tuesday in November, 1927.

THE NORTHERN POLYTECHNIC.

We are informed that the following firms, institutions and individuals have contributed to the prize fund for the Architectural and Building Department of the Northern Polytechnic during the past session:—London Master Builders, 10 guineas; Messrs. Dent and Hellyer, one guinea; Messrs. Smeaton and Hamlin, 7s. 6d.; the Glico Petroleum Co., three guineas; Mr. H. R. Selley (Messrs. Swain and Selley), one guinea; National Joint Council for the Plastering Ind., £2; Mr. A. Adamson, one guinea; Messrs. F. G. Minter, Ltd., two guineas; Messrs. Tiranti, Ltd., book prizes; National Association of Shopfitters, three guineas; "Mary Edis" (Mrs. T. P. Bennett), two guineas; the Association of Master Plumbers, one guinea; Mr. F. J. Wittamore, £1; Mr. F. R. Hiorns, one guinea; Mr. Archibald Campbell, two guineas; the Silicate Paint Co., one guinea; Messrs. James and Bywaters, one guinea; Messrs. A. Sanderson and Sons, three guineas; Messrs. R. W. Greeff and Co., £5; Messrs. G. M. Whiley, Ltd., £3.

British Architects' Conference.

The Annual Conference of British Architects will take place in London from June 20 to June 25 (inclusive). All members of the R.I.B.A., the Architectural Association, and the Allied Societies in Great Britain, Ireland, and Overseas are invited to take part in the conference. It is hoped that many ladies will be present, as guests of members, at all the events contained in the programme. Members are particularly requested to make a note of the date, and to keep themselves free from other engagements. A complete programme with full particulars will be issued in the near future to all the members of the bodies mentioned above.

THE BATH CORPORATION ACT, 1925.

"THE BATH CLAUSE."

WE take the following from the current issue of the R.I.B.A. Journal:—

EXTRACT FROM THE BATH CORPORATION ACT, 1925. CLAUSE 123.

Further power to make by-laws as to new buildings, etc.

128.—(1) (*a*) For the purpose of assisting the Corporation in the exercise of the powers conferred upon them by this section a standing advisory committee of three members (in this section called "the advisory committee") shall be constituted for the city of whom one member shall be a Fellow of the Royal Institute of British Architects to be nominated by the President of the said Institute one member shall be a Fellow of the Surveyors' Institution to be nominated by the President of the said Institution and one member shall be a justice of the peace to be nominated by the council:

Provided that a member of the council shall be disqualified from being a member of the advisory committee.

(*b*) Subject as aforesaid the members of the advisory committee shall be appointed by the council and any vacancy occurring on the advisory committee shall be filled by the council on the nomination of the person or body by whom the members causing the vacancy was nominated. The Corporation shall pay the members of the advisory committee such reasonable fees and expenses as the Corporation think fit.

(*c*) The advisory committee may determine any matter referred to them in such manner as they in their discretion shall think fit and they shall within one month after the receipt of the reference give their decision thereon and any such decision shall have effect as if it were an approval or disapproval (as the case may be) of the Corporation and in the latter case shall contain a statement of the grounds on which the decision is arrived at.

(*d*) Every such decision shall forthwith be reported to the Corporation and upon receipt thereof by the Corporation a copy shall forthwith be sent by the Corporation to the person or persons affected thereby.

(*e*) In the event of a division of opinion among the members of the advisory committee upon reference to them the matter shall be decided by a majority of votes of the members of the committee but save as aforesaid the advisory committee shall act by their whole number.

(*f*) The costs of any reference to the advisory committee shall be paid as the advisory committee may direct. Where such costs or part thereof shall be payable to any person other than the Corporation they shall be recoverable by that person and where such costs or part thereof shall be payable to the Corporation they shall be recoverable by the Corporation and in both cases summarily as a civil debt.

(2) Section 157 (Power to make by-laws respecting new buildings, etc.) of the Public Health Act, 1875, is hereby extended so as to enable the Corporation to make by-laws providing in such manner as they may think necessary for the deposit by a person intending to construct—

(*a*) a building within the city; or

(*b*) an addition to an existing building within the city (including the reconstruction of an existing addition to any such building); or

(*c*) a chimney exceeding forty-five feet from the ground in height;

of drawings of the elevations and particulars as to the materials of such building or addition or chimney (in this section called collectively "elevations").

(3) Where elevations are required to be submitted to the Corporation by a by-law made under the said section 157 as extended by this section the Corporation shall within one month after the delivery of the elevations—

(*a*) approve the elevations; or

(*b*) if they shall consider that having regard to the general character of the buildings in the city or of the buildings proposed therein to be erected or of the building upon or to which the addition is to be constructed or reconstructed the building or addition or chimney to which the elevations relate would seriously disfigure the city whether by reason of the height of the building or addition or chimney or its design or the materials proposed to be used in its construction refer the question of the approval of the elevations to the advisory committee for their decision thereon and the reference shall be accompanied by a statement of the grounds on which the proposed building or addition or chimney is considered to be objectionable.

(4) The Corporation shall forthwith send notice in writing to the person by whom the elevations were deposited of their approval thereof or if the building or addition or chimney is considered to be objectionable on any of the grounds mentioned in this section of the reference of the elevations to the advisory committee and the notice shall be accompanied by a statement of the objections to the building or addition or chimney.

(5) The person by whom the elevations were deposited shall be entitled to send to the advisory committee a statement of his answers to the objections of the Corporation and if he does so he shall at the same time send a copy thereof to the town clerk.

(6) Where the elevations of a building or addition or chimney have been disapproved under this section it shall not be lawful to erect the building or addition or chimney until the elevations thereof have been approved by the Corporation and any person who acts in contravention of this section shall be liable to a penalty not exceeding five pounds and to a daily penalty not exceeding two pounds.

(7) The provisions of paragraph (*b*) of subsection (2) of this section shall not apply to a wooden hoarding which is used solely for the purpose of bill posting.

THE WEEK IN PARLIAMENT.

WESTMINSTER, *Wednesday.*

New Bridges.

COLONEL ASHLEY, the Minister of Transport, stated, during a debate, that he was extremely anxious that in 200 years' time our descendants should not make disparaging remarks of the new bridges which had been built recently. Some extraordinarily fine bridges had been handed down to us, and it was our duty to see that the next generation had bridges worthy of us. At Berwick-on-Tweed a very fine bridge was rising up of reinforced concrete, which would be opened in November or December. It had a span of 365, the biggest concrete span in the country. Farther south, there was the great steel structure between Gateshead and Newcastle, which would be finished very shortly afterwards. It had one steel span with lifts going up on each side. He had always insisted that both in the major and minor bridges, a competent architect should be engaged in order that the design of the bridge should be worthy of the situation. It was a small extra expenditure, and it did give a good design. It was possible, in regard to the smaller bridges made with reinforced concrete, for the concrete to be so tinted as to harmonise with the natural landscape, and not be of that cold, grey colour which reinforced concrete had been during the last few years.

Building Materials Prices.

Mr. Morrison asked the Minister of Health whether he had now received the special Report of the Committee on Prices of Building Materials as to why the prices of bricks and other building materials were still higher than before the coal stoppage.

Mr. Chamberlain: "No, sir. I understand, however, that various materials, including common bricks, have recently fallen in price, and that the Committee propose to issue a report setting out prices current at May 1, pending the completion of their investigation."

Steel Houses.

Viscountess Astor asked the Minister of Health, whether the Weir and Atholl systems of steel construction for houses had yet been submitted for expert investigation by the Building Research Board; and, if so, when the reports on those systems would be published.

Mr. Chamberlain said that the Weir system was examined in detail and reported upon in November, 1924, by the Committee presided over by Sir Ernest Moir, which consisted largely of experts, and it had not been thought necessary to refer that method of construction to any other body for consideration. The Atholl system was recently examined by officers of his department and the Department of Building Research with a view to fixing a loan period for houses built in accordance with it, but he had not yet received their report.

Houses Completed.

Mr. Chamberlain, in reply to Mr. Taylor, gave the following statement showing the number of houses completed during each year, ending in March, since 1919:—

Year	With State assistance	Without State assistance	Total
1920	715	53,800 (a)	251,988
1921	28,549		
1922	101,071		
1923	67,853		
1924	18,664	67,546	86,210
1925	67,669	69,220	136,889
1926	106,987	66,439	173,426
1927	153,779	64,200 (b)	217,979
Total	545,287	321.205	866,492

(A) Separate figures are not available for the years 1920-1923, and the number is based partly on an estimate.

(B) This figure includes an estimate of 33,000 for the half-year ended March 31, 1927. Final figures for this half-year are not yet available.

Design of Buildings.

Viscountess Astor asked if the city of Bath had yet set up the advisory committee to control the design of buildings as they were empowered to do under the Bath Corporation Act of 1924: and whether similar committees had yet been set up at Ruislip and Oxford.

Mr. Chamberlain said that Bath obtained the powers in 1925; the Council had not yet established an advisory committee, pending the settlement of new by-laws. Oxford had not obtained similar powers, but proposed to do so in their town-planning scheme. The Ruislip-Northwood Council, under a town-planning scheme of 1914, might require alterations in the elevations of buildings; if there was a dispute the matter was to be settled by an arbitrator appointed by the president of the Royal Institute of British Architects. There was no advisory committee.

Bequest for Stained Glass.

Mr. John Lindon, of Bidston-road, Oxton, Birkenhead, plumber, who died on March 4, left estate of the gross value of £18,598, with net personalty £17,021. He left among other bequests, £900 to the Bishop of the Roman Catholic Diocese of Shrewsbury for adding eight stained glass windows in substitution for the present plain lead lights in the chapel attached to the Church of the Holy Name, Beresford Road, Claughton.

INSTITUTION OF STRUCTURAL ENGINEERS

PROBLEMS IN THE DESIGN OF STEEL ROOF TRUSS MEMBERS

A paper on this subject was read by Mr. A. G. Pugsley, B.Sc., A.M.I.Struct.E., before the Institution of Structural Engineers on Thursday, May 12. In the course of some introductory remarks, the speaker said that in the design of steel roof truss members but little consideration was usually given to the bending actions which often occur. The most important of these might be conveniently grouped under the following heads :—

(1) Lateral loading on rafters.
(2) Eccentricity of riveting.
(3) Non-intersection of axes of members at joints.
(4) Rigidity of joints and deformation of truss under load.

We give below the lecturer's remarks on lateral loading on rafters. The location of purlins on the rafter members at points other than the so-called joints or panel points, said the lecturer, introduced bending actions of some importance. Adhering to the principal assumption of hinged joints, the general practice was to estimate the bending moment acting upon the rafter by treating it as a series of simple spans from panel point to panel point. Fig. 1 shows the bending moment diagram obtained in this manner for a rafter of three panel lengths under the lateral loading indicated with purlins mid-way between panel points.

The very general use of rafter members continuous from the shoe to the ridge of a roof truss had an important effect upon the conditions of bending in this case. Thus under the components of the resultant purlin loads normal to the slope of the roof, the rafter acted somewhat as a beam continuous over level supports at the panel points and partially fixed at the shoe and ridge connections. Fig. 2 shows the bending moment diagram for the rafter of Fig. 1 treated as continuous and freely supported at its ends. Fig. 3 shows the conditions for the same rafter considered as rigidly fixed at the shoe and ridge connections. It would be seen that the immediate effect of continuity of the rafter was to reduce the magnitude of the bending actions. Table A shows the results of a similar treatment of lateral bending in a series of typical rafters under simple transverse loading; the maximum bending moment occurring in each case was expressed in this table as a percentage of the corresponding maximum bending moment occurring in the rafter when treated as a series of simple spans as in Fig. 1.

The values given in this Table A were based upon calculations involving Clapeyron's Theorem of Three Moments. Yet it was clear that, owing to the deflection of the truss under load, this Theorem would not strictly apply; for the panel points would not generally lie in the same straight line. Effects corresponding to those produced by the subsidence of a support under a continuous girder might be expected, and the investigation of the problem would proceed on the same lines. Considering two adjacent spans of lengths L_1 and L_2, in which the intermediate support fell below the line joining the end supports by h, the calculation of the bending moments might be carried out by Clapeyron's equation extended to include an additional term, so that, using the common notation and appropriate signs, the equation became—

$$B_A L_1 + 2B_B(L_1+L_2) + B_C L_2 = \frac{6A_1X_1}{L_1} + \frac{6A_2X_2}{L_2} - 6EIh\left(\frac{I}{L_1}+\frac{I}{L_2}\right)$$

where B_A, B_B and B_C were reverse or support bending moments at three successive suppports A, B and C.

In most cases for a rafter $L_1=L_2=L$; and assuming this and writing $6B=B_A+4B_B+B_C$ and $6X=6A_1X_1/L^2+6A_2X_2/L^2$ the above equation reduced to—

$$B = X - \frac{2EIh}{L^2}$$

In this equation, B represented a hypothetical bending moment approximating in magnitude to an average of B_A, B_B and B_C supposing that these did not widely differ in value; X was a term dependent only upon the magnitude and distribution of the transverse loading on the two spans and the panel lengths of the rafter; and $2EIh/L^2$ was a term representing the effect of the deviation of the panel points from a straight line upon the typical bending moment B. It would be convenient to rewrite this last term as $2E(I/L)(h/L)$. The stiffness (I/L) for a rafter member in a ridged steel roof truss normally varied from 1/10 to 1/30, and might be taken as 1/20 for an average value. The value of (h/L) in a truss under working loads might be estimated from the calculated deflections of the panel points along a rafter, and from a few such calculations a value of 1/2000 seemed a fair approximation as an average maximum value over two adjacent panel lengths. Hence, taking E as 13,400 tons per sq. in., the value of the term $2EIh/L^2$ was of the order of 0.7 tons-ins. This was quite clearly a small bending effect in comparison with the direct bending actions of the transverse loading represented by the term X; so that the results obtained by treating the rafter as a continuous beam would not be far in error from this cause.

Referring again to the assumptions upon which the calculations embodied in Table A were based, the question of the degree of fixity of the ends of the rafter at the shoe and ridge arose. At the shoe the rafter would usually be connected to a comparatively rigid stanchion; so that the degree of rigidity would mainly depend upon that of the connection. At the ridge, however, where the joint was normally of a decidedly rigid type, the principal factor affecting the fixity imparted to the rafter would be the possibility of unequal loading upon the intersecting rafter members.

Consideration of the values given in Table A in the light of the above modifying factors alone would lead one to suggest an allowance in design for some 80 per cent. of the simple transverse bending moment. But there remained to be considered in this connection the effects of the direct compressive force in the rafter and the stiffening action of the secondary struts and ties of the web of the truss.

The direct thrust would tend to increase the bending of the rafter under its transverse loads. Considering a rafter panel length as a strut of length L, and moment of inertia I under a direct compressive force P, the lateral bending moment would be increased by the ratio—

$$\frac{I}{1-\frac{PL^2}{cEI}}$$

in this expression, having regard to the partial fixity of the ends of the strut, the constant c would have a value of about 20. By the application of this approximate expression to several typical rafter members, the effect of the direct thrust was found to increase the transverse bending action by from 5 to 15 per cent.

TABLE A.

Type of Loading.	Length of Rafter.	B_1.	B_2.	B_3.
I.	2L	⅛WL	75	50
I.	3L	⅛WL	70	50
I.	4L	⅛WL	68	50
I.	5L	⅛WL	68	50
II.	2L	⅜WL	83	67
II.	4L	⅜WL	76	67
III.	2L	⅛WL	100	67
III.	4L	⅛WL	86	67
IV.	2L	⅛WL	100	67
IV.	3L	⅛WL	80	67
IV.	4L	⅛WL	86	67
IV.	5L	⅛WL	84	67

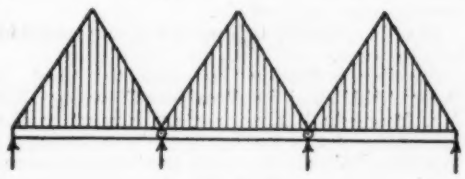


FIG.1.

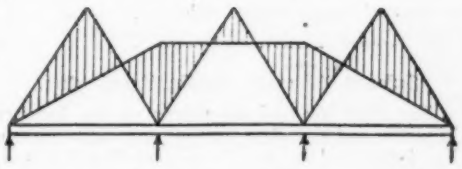


FIG.2.

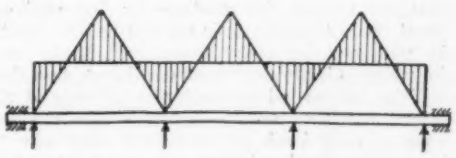


FIG.3.

Lateral loading on a rafter would tend to change its slope at the panel points; and such changes would be resisted by the stiffness of the web members acting through more or less rigid connections. But having regard to the relative stiffness of the rafter and the web members in an ordinary roof truss, it was apparent that this stiffening action would be comparatively small. Furthermore, for transverse loading symmetrical about the panel points, the rafter at these points would undergo no change of slope, and in this case the web members would not be called upon to resist any bending. No general allowance, therefore, could be made for this effect in ordinary design. Consideration of these further modifying factors upon the bending in the rafter suggested an increase of the previously estimated bending moment to about 90 per cent. of the simple transverse bending moment. So that the usual assumption of a moment equal to the simple transverse bending moment would appear to be quite a satisfactory approximation for purposes of design.

An indirect effect of the continuity of a rafter under lateral loading might be noted; where the purlins bore upon the rafter members at other than the panel points, this continuity would affect the transmission of the loading to the panel points. The distribution of the loading in such cases was ordinarily obtained by considering the rafter as a series of simple spans; but by treating the rafter as continuous over level supports and free at the ends, values of the resultant panel point loads were obtained exceeding the usual estimation by 10 to 40 per cent. at the central panel points, with the effective loads at the end panel points correspondingly reduced. This effect was noticed by several nineteenth century writers on the theory of roof truss design and was often allowed for by them in their designs. Later such allowance was objected to on the grounds, firstly, that any deviation of the panel points from a straight line might materially modify the distribution of loading on the panel points, and, secondly, that the general downward flexure of the rafter would tend to reduce the effective loads on the central panel points by the beam action of the rafter as a whole. Reference to this effect had since tended to drop out of the literature of the subject. It was not considered that the reasons quoted above for the omission of this effect were in themselves adequate: a more potent factor was the partial fixity of the ends of the rafter, which might certainly result in a material reduction of the divergence of the effective loads from those ordinarily estimated. Values

for the effective panel point loads intermediate between those obtained by the "continuous" and "simple span" methods might therefore be expected to occur.

Symbols Employed :—

L = Length between adjacent panel points (considered uniform).
B_1 = Max. B.M. on rafter as calculated on assumptions of Fig. 1.
B_2 = Max. B.M. but on assumptions of Fig. 2 (as percentage of B_1).
B_3 = Max. B.M. but on assumptions of Fig. 3 (as percentage of B_1).

Types of Loading :—

I.—Loads (W) at ¼L spacing, every second load being at panel point.
II.—Loads (W) at ⅓L spacing, every third load being at panel point.
III.—Loads (W) at ¼L spacing, every third load being at panel point.
IV.—Loads very closely spaced and treated as uniformly distributed and of total weight W over length L.

ANNUAL DINNER.

THE RT. HON. LORD CARSON, P.C., K.C., was the guest of honour at the annual dinner of this Institution, held on Monday at the Piccadilly Hotel, W., under the presidency of Mr. H. J. Deane, B.Eng., M.Inst.C.E. Among those present were Messrs. S. W. Ackroyd, A.R.I.B.A.; A. H. Adamson; Ewart S. Andrews, B.Sc., M.Inst.C.E.; W. J. E. Binnie; D. A. Bremner; S. Bylander; R. M. Carter; H. John Collins, M.C., M.Sc.; Brig.-General A. C. Critchley, C.M.G., D.S.O.; Messrs. Arthur Downer; F. E. Drury, M.Sc.; F. M. Du Plat Taylor, M.Inst.C.E.; A. H. Durnford, L.R.I.B.A; A. H. Dykes; G. F. Earle; Dr. W. H. Eccles, F.R.S.; Sir Henry Fowler, K.B.E.; H. T. Garvie, M.I.Mech.E.; Rev. F. H. Gillingham, Hon.A.I.Struct.E.; Mr. F. S. Griffiths, F.S.I.; Professor J. Husband, M.Eng., M.Inst.C.E.; Messrs. E. W. King; H. W. Langdon, F.S.I.; Capt. E. M. Leest, T.D., J.P.; Mr. Fred May; Major E. Miles; Sir Ernest Moir, Bart., M.Inst.C.E.; Lt.-Col. J. Mitchell Moncrieff, C.B.E., M.Inst. C.E.; Mr. Emile Mond, Hon.A.I.Struct.E.; Brig.-General Magnus Mowat, C.B.E.; Messrs. John Murray, F.R.I.B.A.; Frederick Palmer, C.I.E.; Sir Lindsay Parkinson; Major James Petrie, O.B.E.; W. T. Plume, Sir Frederick Gill Rice, M.P.; Messrs. J. T. Saunders, F.R.I.B.A.; R. A. B. Smith, A.M.Inst.C.E.; H. E. Steinberg, A.M.Inst.C.E.; P. Malcolm Stewart; Alfred J. Taylor, F.R.I.B.A.; J. H. Walker, M.Inst.C.E.; Major A. H. S. Waters, V.C., D.S.O., M.C., M Inst.C.E.; Mr. Dendy Watney; and Capt M. G. Kiddy, Secretary of the Institution.

The loyal toasts honoured, Major A. H. S. Waters, V.C., D.S.O., M.C., M.Inst.C.E., proposed the toast of "Our Country and Empire." He said that he—like the Company-Sergeant-Major—had only one qualification: he spoke the language. He would take heart from that fact. They were particularly happy to have with them Lord Carson. Only a few knew all the services that Lord Carson had rendered to the country. He would ask them to drink the toast of "Our Country and Empire," coupled with Lord Carson's name.

Lord Carson, in reply, said he felt grateful for the honour the Institution had done him in inviting him and his wife to be there that evening. He felt that all men were interested in construction. Even he himself, at school, was interested in Balbus—who was building a wall. His connection with structural engineering was even closer than that, for his father was an engineer, and, much against his father's advice, he went in for engineering training. He did so well that his father induced him to give it up for fear he should get to like the work! But he felt that if he had been allowed, he would have become the greatest structural engineer of them all! Construction was the one thing that gave pleasure in life. It was not necessary to construct great bridges and dams. He had spent his life in constructing cases. The only thing that could have added to the honour of replying to the toast was that Major Waters had proposed it. He thought the Empire was like a composite arch composed of separate stones, with His Majesty the King as the coping stone that completed that arch.

Sir Ernest Moir then proposed "Our Guests," saying that they had had a most interesting speech from Lord Carson. He thought that there was a similarity between civil engineering and law. Both professions looked to precedent before making their decisions in advance. In Mr. Palmer, they had a very fine example of the Civil Engineer. He would propose the toast, coupled with the name of Mr. Frederick Palmer.

Mr. Palmer, in reply, said the Institution of Civil Engineers had opposed the application of the Institution of Structural Engineers for a charter not because of any professional jealousy, but because they thought it was in the best interests of engineering that the measure should be opposed. They did not object to the Institution of Mechanical Engineers or the Institution of Electrical Engineers having charters, because the work of the members of those institutions was different from the work of civil engineers. But the proposal that the Institution of Structural Engineers should have a charter was in a different category, for if civil engineers were not structural engineers he did not know what were the duties of the members of the Institution of Civil Engineers. They opposed the measure because they wished to avoid any confusion in the use of the words "Chartered Engineer"; they did so with great reluctance and without any feeling of ill-will. The Royal Institute of British Architects was applying, in Parliament, to have the position of architects strengthened and made clear, and the Institution of Civil Engineers was opposing that measure also. The Institution felt that a great deal of the work of its members might come under the description of architectural work. He had personally been associated with the construction of buildings for railways and harbours, and he was quite sure that if that type of work were taken from engineers many of them would have to seek other careers. He would like to see more unity amongst engineers. There were several engineering institutions now in existence, and he was convinced that the sooner they got together and came under one flag the better it would be for engineers as a whole.

The Rev. F. H. Gillingham also responded to the toast.

Sir Henry Fowler then gave the toast of the "I.S.E. and its President," saying that Mr. Deane had taken a great interest in the formation of the Institution. The President, in acknowledging the toast, gave some account of the history of the Institution and said that in the course of the last year they had added over 1,000 members to their roll.

The President then vacated the chair and a musical programme followed.

Science Library, South Kensington.

The Director and Secretary of the Science Library, Science Museum, South Kensington, has intimated to the Council of the R.I.B.A. that facilities will be afforded to members of the Royal Institute, to whom the Board have authorised the issue of books and periodicals on loan to scientific workers, on condition that no charge for postage or for replacement of lost copies falls on the public funds. It will not be possible to send books and journals to individual workers direct, but they will be forwarded through the Library of the Royal Institute on guaranteeing the replacement of any book or periodical that may be lost or damaged. All requisitions for the loan of books by members of the Institute will be signed by the Librarian R.I.B.A.

LIABILITY UNDER A LEASE

A RECENT case, Horlick *v.* Scully (*Weekly Notes*, March 26), raised an interesting point as to the liability of a tenant for maintaining in proper condition ornamental lakes subject to the lease. In 1915 the plaintiff's predecessor in title had leased to the defendant for a term of 13½ years a mansion house and grounds, together with the sporting and fishing rights, under covenants which, *inter alia*, required the tenant to keep and leave "all pleasure grounds," lawns, walks, borders, shrubberies and carriage drives "in good and proper order and condition," and not to do or permit any spoil or damage whatsoever to the demised hereditaments. The pleasure grounds included two ponds and three lakes, the latter occupying an area of about 5½ acres. The main ground of complaint appears to have arisen in connection with the lakes and the trout in them. Evidence was given that when the lease was granted, although there was some mud in the lakes, they were in good and proper condition, but that two of them had become silted up with mud so that there was not sufficient water to keep the fishing in good order and condition, for 2 ft. 6 in. of water over the mud was necessary for this purpose.

In the first place the Court held that the expression "all pleasure grounds" in the lease included the area of the lakes, although they were not specifically mentioned. It appears to have been argued for the defendant that the clearing out of the mud would be in the nature of structural repair for which the tenant would not be liable, and Bird *v.* Elwes (1868, L.R. 3, Ex. 225), Lister *v.* Lane (1893, 2 Q.B. 212), and Dashwood *v.* Magniac (1891, 2 Ch. 306) were cited.

The Court did not accept the contention that this would be structural repair, and as regards the case Dashwood *v.* Magniac, where it had been held in the Court below (L.R. 18, Equ. 309) that a tenant for life who, under a will had to keep the mansion house and grounds in good repair, was under no obligation to clean out a lake, the Court distinguished this case, from the present case, as there was no evidence as to the condition in which the testator had left the lake, and the life tenant was only liable for income expenditure, and it was held it would be inequitable to compel her to undertake a capital expenditure.

The Court therefore held that the plaintiff was entitled to a declaration that under the covenants in the lease it was incumbent upon the defendant to keep and leave all the ornamental waters in good and proper order and condition, and then proceeded to consider what was meant by "proper order and condition" in connection with such a subject matter as this. As regards these lakes, it did not mean that the defendant must clean them out entirely, but that she must arrest any injurious element that rendered the lakes out of order, that is to say, mud must be removed in all parts where the presence of the mud reduced the depth of the water to less than 2 ft. 6 in.

Dealing with the liability of the defendant on a monetary basis, the Court assessed the cost of removing the mud from that lake which was the worst of the three at £300; as regards the second lake, where the obstruction was only partial, the cost was to be estimated by surveyors and added to this sum. Damages were assessed at £20 in respect of the deterioration in the fishing. A claim as to the third lake had been given up by the plaintiff in the course of the trial, and a claim for failing to keep in good repair the stone and brick curbing round the lakes was characterised by the Court as a trivial matter, and no damages were awarded as to this.

Westminster Bank, Ltd.

The Rt. Hon. Sir Alfred Moritz Mond, Bart., P.C., M.P., has been appointed a director of Westminster Bank, Ltd.

THE LONDON BUILDING ACTS AND THEIR APPLICATION.—XVIII

By H. V. MILNES EMERSON, A.R.I.B.A.

SECTION 65: FURNACE CHIMNEY SHAFTS.

Unless the Council otherwise permit, every chimney shaft for the furnace of a steam engine brewery distillery or manufactory shall be constructed in conformity with the following rules :—

(1) Every shaft shall be carried up throughout in brickwork and mortar of the best quality, and if detached shall taper gradually from the base to the top of the shaft at the rate of at least 2½ in. in 10 ft. of height.

Note.—Lime mortar should be used for detached shafts, cement mortar can be used for shafts within a building. Enclosed shafts need not be tapered.

(2) This sub-section specifies the thickness of brickwork to the shaft.

(3) Every cap, cornice, etc., shall be constructed and secured to the satisfaction of the District Surveyor.

(4) The foundation of the shaft shall always be made to the satisfaction of the District Surveyor on concrete or other sufficient foundation.

Note.—Sub-sections 3 and 4 relating to the construction and fixing of cap to shaft and the formation of the foundation is left solely to the discretion of the District Surveyor. Foundations for structures other than furnace chimney shafts are subject to the by-laws of the L.C.C.

(6) The width of the base of the shaft, if square, shall be at least one-tenth of the proposed height of the shaft or if the same is round or any other shape then one-twelfth of the height.

(7) Any firebricks built inside the lower portion of the shaft shall be provided as additional to and independent of the thickness of brickwork prescribed by these rules and shall not be bonded therewith.

Note.—Firebrick linings to shafts or flues should not be bonded to the ordinary brickwork owing to the uneven expansion and contraction. Firebricks should be set in fireclay. A shaft in a large London hotel was built as follows :—The shaft was within the building, square section. The walls were built without batter with the offsets inside. The firebrick lining was carried to the top of the shaft, being 9 in. thick for the first 20 ft. and 4½ in. thick for the remaining height of about 100 ft. At intervals of 10 ft. this 4½ in. lining was carried on an iron frame supported on brackets from the outer wall. A space of 2 in. was left between the top of each section of the firebrick lining and the iron base plate above to allow for expansion and contraction of the brickwork, an iron plate on the inside face covering the cavity and preventing the smoke passing through. The space between the firebrick lining and the outer wall increased in area with the height. The top was covered over and the space was utilised as a ventilating shaft, air ducts entering at each floor level, the air being extracted at the top of the shaft by means of an electric blower aided by the heat passing up the internal shaft. This air space also prevented the heat from the shaft passing into the rooms adjoining same.

A steel internal shaft can be substituted for the firebrick shaft described above, if required.

Section 66.—(1) The floor under every oven, copper, steam boiler or stove which is not heated by gas, and the floor around same, shall for a space of 18 in. be formed of materials of an incombustible and non-conducting nature not less than 6 in. thick.

Note.—Ordinary chimney openings are dealt with under Section 64. A special fee is chargeable by the District Surveyor in respect to this and the following sub-sections.

(2) A pipe for conveying smoke or other products of combustion, heated air, steam or hot water, shall not be fixed against any building on the face adjoining to any street or public way.

(3) A pipe for conveying smoke or other products of combustion shall not be fixed nearer than 9 in. to any combustible materials.

(4) A pipe for conveying heated air or steam shall not be fixed nearer than 6 in. to any combustible materials.

(5) A pipe for conveying hot water shall not be placed nearer than 3 in. to any combustible material.

Provided that the restrictions imposed by this section with respect to the distance at which pipes for conveying hot water or steam may be placed from any combustible materials shall not apply in the case of pipes for conveying hot water or steam at low pressure.

For the purposes of this section hot water or steam shall be deemed to be at low pressure when provided with a free blow off.

Note.—Although the foregoing restrictions do not apply to pipes conveying hot water or steam at low pressure, care should be taken that such pipes are covered with a non-conducting material when passing under wood floors, etc. Unprotected pipes in similar positions have been the cause of fire.

Section 67.—Floors above furnaces and ovens.—The floor over any room or enclosed space in which a furnace is fixed and any floor within 18 in. from the crown of an oven shall be constructed of fire-resisting materials.

Note.—New floors would be constructed of concrete, etc. If an existing building is being equipped with an oven and the floor above same is of wood it can remain if it is 18 in. or more above the crown of the oven, but if within 18 in. the floor must be removed and constructed of fire-resisting materials in accordance with the London Building Acts (Am.) Act, 1905, First Schedule Sub-section 4 (a) In the case of floors and roofs, brick tile terra cotta or concrete . . . not less than 5 in. thick in combination with iron or steel.

Section 68.—Rules as to accesses and stairs in certain buildings.—In every public building and in every other building of more than 125,000 ft. in cubical extent and which is constructed or adapted to be used as a dwelling-house for separate families, the floors of the lobbies, corridors, passages and landings and also the flights of stairs shall be of fire-resisting material and carried by supports of a fire-resisting material.

Note.—The floors would be as Sub-section 4 (a) of the 1905 Act, but the stairs can be in hardwood of 1¾ in. finished thickness as described in Sub-section 2 of the first schedule of the 1905 Act.

The rules for the construction of staircases and corridors of public buildings are given in Section 80 and will be dealt with later.

Section 69 (1).—In every building constructed or adapted to be occupied in separate tenements by more than two families the principal staircase used by the several families in common shall be ventilated upon every storey above the ground storey by means of windows or skylights opening directly into the external air or shall be otherwise adequately ventilated.

(2) The principal staircase in every building being a dwelling-house and not subject to the provisions of Sub-section 1 of this section shall be ventilated by means of a window or skylight opening directly into the external air.

Note.—The size and position of window or skylight is not given. Although the window of a staircase has to be in an external wall, the staircase need not have an external wall provided the staircase well is connected at each storey to an external window with a ventilating trunk. The skylight need not be directly over the staircase well. Ventilation and not light is required by this section. In Sub-section 2 the method adopted in the present-day two-storied dwelling-house is to provide a hinged ceiling light over the staircase (when not on an external wall) with a hinged skylight in the roof. Apart from lighting the staircase the skylight is practically useless for the purpose of ventilation as it is very seldom opened.

Section 70.—Rules as to habitable rooms (1) (a) Every habitable room, except rooms wholly or partly in the roof, shall be in every part at least 8 ft. 6 in. in height from the floor to the ceiling.

Note.—The height is measured from floor to ceiling and not from top of floor joist to underside of ceiling joist. In the majority of the districts outside London the minimum height of rooms is 8 ft. Under the Met. Building Act, 1855 (repealed) the height of every habitable room in London had to be at least 7 ft. from floor to ceiling, and under modern conditions the height of 8 ft. 6 in. could be modified.

(b) Every habitable room wholly or partly in the roof of any building shall be at least 8 ft. in height from the floor to the ceiling throughout not less than one-half the area of such room.

(c) Every habitable room shall have one or more windows opening directly into the external air or into a conservatory with a total superficies clear of the sash frames free from any obstruction to the light equal to at least one-tenth of the floor area of the room and so constructed that a portion equal to one-twentieth of such floor area can be opened and the opening in each case shall extend to at least 7 ft. above the floor level, but a room having no external wall or a room constructed wholly or partly in the roof may be lighted through the roof by a dormer window with a total superficies clear of the sash frames free from any obstruction to the light equal to at least one-twelfth of the floor area of the room and so constructed that a portion of such window equal to at least one-twenty-fourth of such floor area can be opened, and the opening in each case shall extend to at least 5 ft. above the floor level or such room may be lighted by a lantern light of which a portion equal to at least one-twentieth of the floor area can be opened.

Note.—Windows equal to one-tenth of the floor area must be provided to each habitable room, the height of such window from the floor to the underside of the frame must be not less than 7 ft. and one-half of the windows must open. Windows in excess of the minimum requirements can be fixed in any position and can be made fixed or to open. The window area of one-tenth of the floor space is the general rule throughout the country.

With regard to lighting habitable rooms in a roof, the London Building Acts Committee recommend "that bedrooms with top light only should be forbidden." Every w.c. must be provided with a window, so that at least 2 square feet in area shall be made to open directly into the external air.

Antiquities of Surrey.

The Surrey Archæological Society, at their annual meeting at Guildford recently, re-elected Lord Onslow as president. In proposing the adoption of the seventy-second annual report, Lord Onslow said, regarding the ancient British, pre-Roman camp at St. George's Hill, which is popularly known as "Cæsar's Camp," that the committee of the council, appointed to consider the whole question, and to conduct the necessary correspondence with the owner, had reported that the minimum of what it seemed should be preserved should be approximately the northern portion of the camp, from a property known as Deepcut on the east to a little below the meeting of the three roads on the western side. The owner was therefore asked:—(1) The amount of land he would be willing to sell; (2) the price; (3) the restrictions on the user it was desired to insert in any trust. It had been pointed out that there was no suggestion of turning the land into a recreational playground, but the object of the Trust would be the preservation of an ancient monument. They were now awaiting a reply.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting!—Ed.

Rain-Excluding Devices.

Sir,—Arising out of the correspondence upon this subject, I would like to draw attention to the common practice in post-War work, of cutting down the sizes of window frames to a limit which makes it almost impossible to provide adequate throating grooves. The labour of making up a 4 in. by 3 in. frame is practically the same as that for a 3½ in. by 2½ in., while the cost of the material works out at about 3½d. per foot run against 2¾d., or an extra of about 1s. 3d. per ordinary three-light casement window. The additional efficiency is incalculable, and there is no doubt that many of the faulty windows we are called upon to pronounce judgment upon are in such a state owing to foolish cheese-paring more than to bad timber. There is no doubt that the example has been set by some of the M. of H, specifications for housing, and it is high time that architects renounced the habit. The views of some of your correspondents upon the subject would be instructive.

Watchman.

Pine Sawdust Packing.

[Reply to Readers, May 6.]

Sir,—There is no doubt that damp sawdust in a confined space is liable to spontaneous combustion, but I believe that the conditions in which such an occurrence might come about would have to be particularly favourable to the process. The sawdust would have to be thoroughly sodden in bulk, and the atmospheric conditions just so as to suit, and I should say that the chances of these conditions combining would be a hundred to one against. What I should be more afraid of would be the setting up of rot, if, as seems to be the case, the access of damp to the sawdust is at all likely. Many a case of rot under floors has been traced to the improper cleaning out of the underfloor and the leaving of shavings and sawdust to hold the damp and infect the timbers. I should suggest that instead of using sawdust packing, slag wool be used well sprayed with a strong solution of formalin. If the casing is moderately airtight, the strength of this solution should remain for a long period, and would be an excellent preventive against vermin.

Cautious.

Polish for Choir Stalls.

[Reply to A. J. W., May 6.]

Sir,—One of the finest polished mahogany tables I have ever seen was the result of continual rubbing in and polishing with oil. It is a long process, but seems to me to be the right one for the case quoted, since oil has already been used. It is just a matter of rubbing well in and allowing to dry in, and repeating the process until a fine surface is produced. There is no hurrying it.

Lasting.

Specification Clause.

[Reply to Builders, May 13.]

Sir,—"Builders" do not state whether they have actually entered into the contract containing the terms given. If they have not yet done so, it would be well for them to leave the matter until such times as they can succeed in getting the clause removed, and the work comprised in the contract better defined so as to prevent difficulties arising. But if, as appears, they have already entered into the contract, very little is open to them but to comply with the architects' instructions. These, however, must be reasonable; and can only be given after a consideration of what was intended by the parties to the contract, and what the contract includes. As to this last, in a lump sum or entire contract, all work necessarily incident to the performance of the work undertaken is included; for instance, any necessary preparatory work, also such work or materials which, although not mentioned or described in the contract, are indispensably necessary to complete the work contracted for as a whole.

It is to be hoped that there is an arbitration clause included in the contract; as by that alone can "Builders" secure redress in the event of the architect being unreasonable in a decision as to whether certain work is inside the contract or not.

Law.

Asbestos Bungalow.

Sir,—How does a bungalow, the shell of which is composed of a timber framework with sheets of asbestos on the inner and outer sides, compare with a brick bungalow of similar size, in regard to (1) value; (2) durability; (3) resistance to changes in outside temperature?

The asbestos building has brick foundations. Does the market value of an asbestos house depreciate rapidly on account of its character? Are there any special disadvantages in an asbestos house?

H. D.

Bending Moment.

[Reply to W. B., May 13.]

Sir,—From the information provided it would appear that the ends of the beams in each given are more or less rigidly fixed, and consequently must be subjected to a bending moment of some magnitude greater than zero.

Two cases of case (*a*) can be readily solved: First, when the ends *rest* freely on the end supports, and the moments at the ends are then *zero;* secondly, when the ends are *rigidly fixed*, and the end moments are then $\frac{WL}{12}$ for a uniformly spread load, or $\frac{WL}{8}$ for a load *W* concentrated at mid-span. The end moments will differ from these amounts according to the amount of elastic yielding of the end supports. W. B. should consult Morley's Theory of Structures, chaps. VII, VIII, and XV, in which this subject is dealt with in some detail. If this matter is of sufficient general interest I would deal with this query at greater length.

G. J. W.

THE TRADES TRAINING SCHOOLS

The annual judging of the work done by the students of the Trades Training Schools, 153, Great Titchfield-street, W.1, during the past session, took place on Wednesday, the 11th inst. The judges were Mr. G. C. Barnes, Major Gerald F. Bird, Mr. Lewis W. Bristowe, Mr. J. H. Davies, Mr. E. Guy Dawber, A.R.A., P.R.I.B.A., Sir Harry Foster, M.P., Sir George Frampton, R.A., Mr. F. T. W. Goldsmith, F.R.I.B.A., Mr. W. Stewart-Greene, Mr. Alexander L. Howard, J.P., Major E. B. Hunter, M.I.E.E., Sir W. Goscombe John, R.A., Mr. R. J. Johns, Mr. Bertrand Johnson, C.C., Mr. Arthur Keen, V-P.R.I.B.A., Mr. S. Lovering, Sir Edwin L. Lutyens, R.A., F.R.I.B.A., Mr. C. J. Newson, Mr. George Parlby, Mr. W. T. Plume, Mr. E. S. Rider, Mr. Frank W. Robson, Mr. S. G. Castle Russell, M.I.E.E., Mr. H. D. Searles-Wood, F.R.I.B.A., Sir John W. Simpson, P-P.R.I.B.A., Mr. F. Adams Smith, F.R.I.B.A., Professor R. Elsey Smith, F.R.I.B.A., Sir Brumwell Thomas, F.R.I.B.A., Mr. T. W. Townend, Professor W. H. Wagstaff, M.A.

Mr. H. Westbury Preston, Master of the Worshipful Company of Carpenters, presided, and the Carpenters' Company were represented by Mr. Frederick Sutton, J.P. (chairman of the schools), Mr. Percy Preston, and Mr. J. Hutton Freeman, the clerk.

The classes of Carpenters, Joiners, Handrailers, Masons, Glaziers, Painters and Decorators, Plasterers, Plumbers, Metal Workers, Stone Carvers' Life Modelling, Tylers and Bricklayers, Wheelwrights, Woodcarvers, and Electricians produced a large amount of work which was most interesting, and showed in a comprehensive manner the value of the training provided at these schools under the directorship of Sir Banister Fletcher, F.S.A., V-P.R.I.B.A. Prizes and medals as awarded by the judges will be distributed at Carpenters' Hall, Throgmorton-avenue, in the early part of next session after the re-opening of the schools on September 19.

The Carpenters' Company, who maintain the schools in conjunction with the Associated City Companies of Armourers and Braziers, Glaziers, Joiners, Painter-Stainers, Pewterers, Plasterers, Tylers and Bricklayers, and Wheelwrights, are to be heartily congratulated on the excellent work of these schools. Information as to the classes and illustrations of the work carried out by students will be given in the annual report, which is published during the summer.

CENTRAL VALUATION COMMITTEE

The Central Valuation Committee (which was constituted under Section 57 of the Rating and Valuation Act, 1925, with the view of promoting national uniformity in valuation for local rates) held a meeting at the offices of the Ministry of Health on Friday, May 13. There was a large attendance of members, twenty-seven out of the total of thirty-two being present, under the chairmanship of Mr. Thomas White, J.P., of Liverpool.

The committee had a varied agenda before them, including a report on a number of miscellaneous matters by the executive committee. The committee came to decisions upon the following matters:—(*a*) whether, where the weekly or monthly rent is taken as the basis in arriving at the gross value, any deduction should be made from the sum calculated by multiplying that rent by 52 or 12, as the case may be; (*b*) the assessment of property depreciated in value owing to damage resulting from mining subsidence; (*c*) whether the gross value of "tied" farm cottages should be limited to the amount at which the value of occupying a cottage is reckoned as part-payment of wages in lieu of cash; (*d*) the separate assessment of land covered with water, where such land is comprised in a larger hereditament; (*e*) whether it would be proper to reduce or increase to the nearest pound a gross value which includes a fraction of a pound; (*f*) the valuation of glass houses which are "agricultural buildings" under the Act of 1925; (*g*) the effect of section 12 (9) of the Increase of Rent and Mortgage Interest (Restrictions) Act, 1920, in relation to the committee's previous resolutions; and (*h*) the general question of the relation of tithe rent charge to the gross value of farms.

The committee also adopted their annual report for the period ended March 31 of this year, and ordered the report to be submitted to the Minister of Health. The committee further authorised a letter to be addressed to county valuation committees and county borough councils inviting them to make contributions to the expenses of the committee in accordance with the scale previously fixed by the committee and approved by the Minister.

It will be recalled that the committee is composed of twenty-four persons appointed by the Association of Local Authorities, and of eight persons appointed by the Minister of Health. Of the latter number, seven are either members or officials of local authorities, so that out of a total of thirty-two members, thirty-one are either members or officials of the local authorities concerned with the valuation of property for local rates. The committee, in December last, issued a first series of representations, which was circulated by the Minister of Health to the local authorities and received wide publicity. A second series of representations will shortly be made to the Minister of Health embodying the committee's decisions on the matters referred to above.

THE BUILDING TRADE

THE LAW OF FIXTURES.—IV.

By W. T. CRESWELL, Barrister-at-Law; L.R.I.B.A.; Associate (late Fellow) of the Surveyors' Institution; &c.

OWNERSHIP AND REMOVAL OF FIXTURES (2).

Relaxations to the Common Law Rule.

It has already been stated that questions as to the right to remove fixtures have in the past arisen from three different relationships of persons—(1) Between the heir or devisee and the executor of the absolute owner. (2) Between the remainderman and the executor of a tenant for life or in tail. (3) Between landlord and tenant. The rule that articles, when fixed, remain part of the freehold, has not been relaxed in the first case, and all the law leans in favour of the heir. In the second case there has been some relaxation in favour of the executor of the limited owner, and in the last case great relaxation in favour of the tenant. In the important case of *In re* De Falbe, Ward *v.* Taylor (1901), 1 Ch. 523, it was said that probably even at that date the relaxation was the same in each case, and was not confined to the relationship of a landlord and tenant, but extended equally to other cases also. Though an article may, technically, by being fixed to the freehold, thus lose for a time its chattel nature, yet by virtue of the exception or relaxation above referred to, as between limited owners and tenants, it is restored to its original condition and is a chattel and removable. In Leigh *v.* Taylor (1902), A.C. 157, Lord Halsbury, C., said: "It is all very well to say that there is a difference between the cases of an heir and an executor on the one hand, and a landlord and a tenant on the other; but if you grant the proposition that it must depend upon the purpose of the annexation, and you must attend to the degree of annexation, I am wholly unable to frame a hypothesis of a state of things in which these two principles will not decide the question, whether you are dealing with a landlord and tenant, or whether you are dealing with a tenant for life and a remainderman, or with people standing in any other relation to these things."

As to whether fixtures are intended to form part of the land, *In re* Hulse Beattie *v.* Hulse (1905), 1 Ch. 406, a tenant for life granted a lease for twenty-one years of a steam-mill and machinery, the lessee covenanting that at the end of the lease he would sell all the machinery then on the premises other than the demised machinery. On the expiration of the tenancy the tenant for life duly bought this machinery. He died, and his executrix claimed the machinery thus bought. It was held, in the absence of proof that the tenant for life intended to make a present to the remainderman, the machinery belonged to the tenant for life, and passed on his death to his executrix. Buckley, J., said: "The question is, not what is the nature of the attachment of the chattel to the soil, but what, having regard for all the facts of the case, must have been the *intention* of the tenant for life. . . . The question has been argued whether the true principle is that when the tenant fixes chattels to the freehold, with the right to remove them during his term, that right is an exception by which the chattels do not become part of the freehold. It appears to me that the exception is an exception to the maxim '*Quidquid plantatur solo soli cedit.*" It is not that the law allows the tenant for years to remove part of the freehold, but that the chattels have not become part of the freehold. The exception makes them not part of the freehold."

Between Mortgagor and Mortgagee.

The common law rule is rarely, if ever, relaxed between mortgagor and mortgagee, since articles affixed either before the mortgage or during the period of the mortgage pass to the mortgagee as part of his security. This, too, whether the mortgage is legal or equitable, and the property mortgaged is freehold or leasehold. Further, the right of a third party to remove articles which have been fixed during the term of the mortgage by the mortgagor giving that third party (under certain circumstances, for instance, a hire-purchase agreement) the right to remove them, must be exercised before the mortgagee takes possession.

In Lyon & Co. *v.* London City and Midland Bank (1903), 2 K.B. 135, chairs were hired from the plaintiffs for use in a hippodrome, by the owner and occupier of that building, under an agreement for hire containing an option of purchase which, however, was never exercised. It was held that the chairs did not cease to be chattels, although they were screwed to the floor, and that the property in them did not pass, as against the plaintiffs, to the mortgagee of the freehold under a mortgage of the building and fixtures. But in a case where the owner of the premises was also the owner of the chairs, and they were similarly fastened, they were held to be fixtures.

In Reynolds *v.* Ashley & Son, Ltd. (1904), A.C. 466, where machines had been supplied to the lessee of a factory on the hire-purchase system, and were affixed to the floor by bolts and nuts, and could have been removed without injury to the building or to the concrete bed in which the bolts were embedded, it was then held that the machines had been so affixed as to pass under a mortgage to the mortgagee. Here, the machines were regarded as improvements or additions to the land or buildings and as constituting a part of the mortgagee's security; so that nothing short of an express or implied agreement or express notice of the terms of the hire-purchase agreement made with the mortgagor whilst in possession would limit the mortgagee's rights to them as part of his security.

In *re* Cookes *v.* Morrison, Jones & Taylor, Ltd. (1914), 1 Ch. 50, under an agreement the plaintiff agreed to erect and complete a sprinkler installation for the protection of the defendant's premises from fire, the latter paying for it by instalments; the sprinkler to remain the property of the plaintiffs until the entire sum should have been paid. Subsequently, a receiver was appointed on behalf of the debenture-holders of the defendant company, and as they had not fully paid up the instalments, it was held that the plaintiff was entitled to enter upon the defendant company's premises and remove the installation, notwithstanding the appointment of the receiver. Thus enunciating the well-known rule of equity that where there are equal equities the law prevails.

In *re* Ross and Boal (1924), C.A. 1 I.R.129, an Irish case, the lessee's leasehold interest in certain premises had become subject to an equitable mortgage entered into with a bank by deposit of title deeds. Upon benches there were placed power-driven sewing-machines, which, however, were not fixed to the benches in any way, but were held in position by means of easily movable attachments. It was held that the sewing-machines did not pass as fixtures to the bank under the equitable mortgage.

Recent Legislation.

Under the Law of Property Act, 1925, the question of the removal of fixtures may still arise between an equitable tenant for life and the person entitled to the equitable remainder; and, in the case of the realisation of both freehold and leasehold mortgages, under a statutory power of sale and right to foreclose or take possession of the property, that power or right extends also to the absolute or other interest therein affected by the mortgage charge, and will include fixtures or chattels personal.

When Fixtures are Removed.

Fixtures which are removable by the tenant can only be removed during the term of the lease; and if he does not remove them during the term then they become the property of the landlord or reversioner; and any attempt of his to remove them after the term would constitute him a trespasser. In British Economical Lamp Co., Ltd., *v.* Empire, Mile End, Ltd. (1913), 29 T.L.R. 386, electric light filament lamps affixed to brackets, by the bayonet attachment in common use for the purpose, were, on the lessor's re-entering for non-payment of rent by the lessees, left on the premises. The lamps had been let to the lessees by the plaintiffs (the Lamp Co.), who at that time had made no demand for the lamps which undoubtedly were removable fixtures, but subsequently did claim them from the lessors, who refused to give them up. The plaintiffs therefore sued them in detinue (*i.e.*, for detention of the goods), and it was held that they were not entitled to recover.

Time in which to Remove Fixtures.

The right to remove fixtures extends throughout the term and over any additional period during which the tenant is entitled to consider himself as a tenant. This extension of time is not applicable where a notice to quit has been given and the tenant has nevertheless held over without the landlord's consent; but it would, of course, apply in the case of a Statutory Tenant holding over under the Rent Restriction Acts, 1920-1925. The position of that tenant, as to removal of fixtures, being the same as under the original tenancy.

A tenant holding over on an uncertain tenancy (*i.e.*, which is determinable without notice as in a lease for lives), or again, a tenant entitled under the stipulations of a lease to remove fixtures has either of them, a reasonable time after the end of the last life or after the expiry of such term in which to remove them.

Where there is a surrender of a lease, and a new lease is entered into with the same lessee who held the head lease, the new lease will include the tenant's fixtures as part of the demised premises; and if there is no stipulation in the lease, the effect of surrender and the granting of a new lease will be the forfeiture of any right the lessee had to remove the tenant's fixtures under the former lease; although, as previously stated, a tenant remaining in possession after the expiration of the term (if he can show that there is merely a prolongation of the term) is allowed to remove fixtures after the original term is ended. (See Leschallas *v.* Woolf, 1908, 1 Ch. 641.)

Izaak Walton's Cottage.

Izaak Walton's cottage at Shallowford, Staffordshire, has been destroyed by fire, but the contents of the building, which is now a museum, have been saved. The cottage, which is near the main railway line from Stoke to Stafford, is a half-timbered seventeenth-century building with a thatched roof, and forms part of the farm that Izaak Walton occupied in his later years, and which he bequeathed to the poor of the town of Stafford. It was restored three years ago at a cost of £570 and was opened as a museum in April, 1924. The trustees have decided to take steps to restore the premises to as far as possible their original condition, and to issue an appeal for funds. The main walls of the cottage and some of the principal timbers are still intact. The ancient fireplace, which was the chief feature of interest in the interior of the cottage, and was covered with a mass of debris, is to be carefully restored.

TEMPORARY TIMBER CONSTRUCTION, INCLUDING SHORING.—III.

By G. A. GARDNER, M.I.Struct.E., Assoc.I.E.E., etc.

PART I of these articles gave general information regarding the basis of design for temporary timber structures, with special reference to the external forces, including the allowances for live loading, wind pressure, etc.; whereas Part II dealt principally with the internal resistances and gave values for safe working stresses. It now remains to consider in detail the component parts occurring in the generality of temporary structures, and to set down data for the design of the joints and connections.

Members acting as beams are usually proportioned to suit the safe flexural stresses; but the tendency to fail by horizontal shearing should be borne in mind, especially as shakes and checks caused by seasoning tend to initiate this type of failure. The effect of horizontal shear failure is to cause the beam to split along one or more longitudinal planes and hence subsequently to break across as several separate, shallow beams. Fig. 6 shows a portion of a 2 in. by 7 in. fir beam which first failed in horizontal shear along two planes, on a span of 4 ft. 6 in. The fractured surface seen in the photograph is quite smooth and has followed an annual ring; and the first signs of failure occurred at an average shear stress of 275 lb. per sq. in.

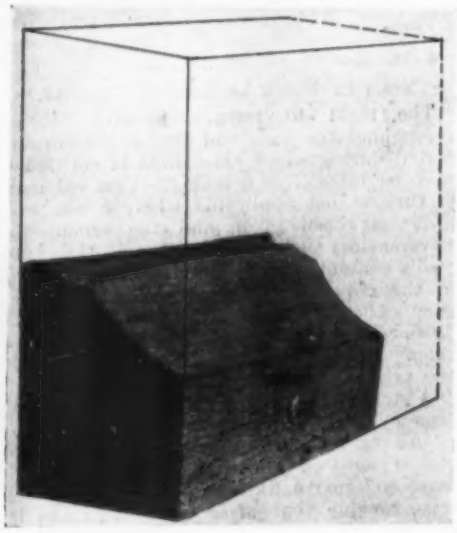


FIG. 6.

The graph in Fig. 7 indicates how the intensity of horizontal shear varies with the proportions of the cross section in rectangular beams, and shows that it is in the narrower and deeper beams where this alternative tendency to failure must be considered. The simple straight-line formulæ for proportioning beams to suit the safe working stresses laid down for flexure and horizontal shear must be used with some degree of caution in cases where beams are notched out to a lesser depth at their bearings. Tests on beams so notched indicate a serious reduction in carrying capacity when the notch is approaching 20 per cent. of the depth, and this is to be expected not only on account of the reduced sectional area governing the intensity of vertical and horizontal shear, but by reason of the sudden change in stiffness of the beam at the shoulder. The effect of the lesser stiffness of the notched portion is to give rise to a secondary flexure which causes a splitting at the shoulder due to tension across the grain; and so marked is this effect that if the shoulders are cut away in a slow taper towards the centre of the beam the strength of the beam as a whole is *increased* by a considerable percentage. It is not suggested that notching at the supports must be prohibited (for the proper framing together of the parts of a temporary timber structure may be a matter of importance in some cases), but that an allowance should be made for the weakening effect. Experimental data in this connection are not sufficiently extensive to enable any precise rules to be formulated, but as a very rough guide the percentage reduction in the ultimate carrying capacity may be reckoned as one and a half times the percentage reduction in the depth of the beam at the bearings, for notches up to 33⅓ per cent.

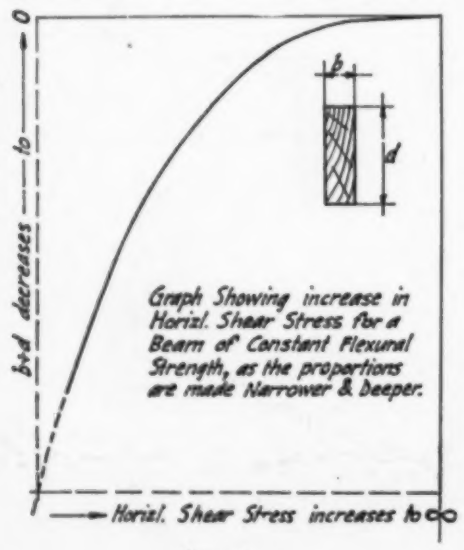

0
b·d decreases
b
d
Graph Showing increase in Horizl. Shear Stress for a Beam of Constant Flexural Strength, as the proportions are made Narrower & Deeper.
Horizl. Shear Stress increases to ∞

FIG. 7.

Where timber beams are employed as needles or bressummers in important shoring scheines their deflection under load must be counteracted by some arrangement of wedges in order to prevent undue settlement of the work over: and this can usually be accomplished by pairs of folding wedges at the supports of the beams. The wedges must be long enough to allow tightening from time to time after the initial sag of the beam has been taken up, because the deflection of a timber beam is cumulative, due, among other things, to variations in the humidity of the atmosphere The ultimate deflection under long-time loading, may be computed with sufficient accuracy by taking only 50 per cent. of the value of the modulus of elasticity or proportional deformation, E, as established by short-time laboratory experiments, in the general formulæ for deflection.* The approximate values of E for various kinds of timber may be taken as follows:—

Pitch Pine, Oregon Pine or Douglas Fir, 1,400,000 lb. per sq. in.; Oak, 1,200,000 lb. per sq. in.; Northern Pine, Baltic Fir, Red and Yellow Deal, 1,200,000 lb. per sq. in.: Spruce, White Deal, American White Pine, 1,000,000 lb. per sq. in.

Another matter to keep in mind is the sufficiency of a beam in bearing across the grain (*cf.* article ii); and this is likely to be a governing factor in short beams carrying heavy concentrated loads. The question of the adequacy of the bearing at the supports of a beam is important in gantry structures carrying rolling loads; and it is sometimes necessary to introduce a bolster of hard wood, such as oak, at the top of a post, for example, in order to increase the bearing area of the beam.

Rectangular beams may be required to function with their sections inclined at various angles to the plane of loading, and it must be borne in mind that the strength of the beam will depend upon two alternative conditions: (1) where the deflection of the beam is free to take place in a direction inclined to the plane of loading, conformable with the principles of elastic deformation; and (2) where the beam is constrained to deflect in the load-plane. The former condition would be approached if a load were freely slung from such a beam; and the latter if the load were communicated by other beams providing lateral restraint. Formulæ for calculating the Resistance Moment of beams obliquely loaded will be found in the standard text-books on Theory of Structure.

Very few failures of timber beams under working loads occur in practice, for the reason that undue springiness and deflection are readily noticed and usually give rise to some timely remedial measure such as propping. The writer, however, knows of two instances where failure occurred, and of another case where the drawings for an important timber structure bore the reference: "If undue deflection noticed in this member, prop to be added"!

Much more uncertainty exists about the maximum carrying capacity of timber posts or struts than about the strength of beams; especially in cases where the section of the strut is built up of several timbers fastened together, and where the proportions of the strut are slender. The safe intensity of loading can, nevertheless, be laid down for all practical purposes; and the undermentioned formulæ and dictates for design may be accepted with confidence.

Readers not familiar with the behaviour of struts under test loading may be reminded that slender posts, *i.e.*, those of which the ratio $l \div d$ [(length) ÷ (least cross sectional dimension)] is in the region of 35 and over, tend to fail by buckling rather than by direct tissue destruction; and that in the case of a very slender strut, failure is signified by the elastic bowing of the member without the ultimate crushing (or flexural) resistance of the timber being reached—the strut shown under test in Fig. 8, for example, almost entirely regained its original straightness after

FIG 8.

being removed from the machine. In the case of carefully designed timber structures of a permanent character the writer has permitted struts with a ratio of slenderness as great as 60; but for the rougher construction contemplated in temporary timber work a value between 40 and 50 should be considered the limit, and this only in the case of struts whose end bearings are flat, *i.e.*, normal to, and the full area of, the cross section of the member; whilst bracing struts with ends bolted to the sides of the main timbers should be limited to a ratio of about 35.

Flat-ended posts or struts of rectangular section, with a length not greater than 15 times *d* may be loaded up to 7-10ths of the safe intensities of bearing pressure parallel to the grain, given in the table accompanying the second article in this series; and for similar struts with a greater ratio of slender-

* See any elementary book on structural mechanics for deflection formulæ.

ness the following formula is applicable:—

$$p = b\ (1 - \frac{l}{50\,d})$$

in which p is the safe pressure in pounds per sq. inch; b is the appropriate bearing pressure parallel to the grain as given in the above-mentioned table for the kind of timber in question; l is the length of the strut in inches; and d its least cross-sectional dimension in inches. It is seen that the formula gives a result $p = o$ when the ratio of slenderness is 50; and this tends to limit the useful range of struts to a little over 45 for the value $l \div d$.

In cases where the load is communicated to the strut through bolted side connections allowance must be made in the above formula for the increased tendency of the more slender struts to buckle, due to lack of the restraint which the flat ends provide, and to the weakening effect of eccentricity of loading resulting from the uneven distribution of bearing pressure at the bolted joint. This allowance can be covered in the formula by taking an increased length for the strut, known as the virtual length, lv, such that $lv = 1\frac{1}{2}l$. The value of p will then $= o$ when the actual ratio of slenderness is 37.5; and this will limit the useful range to $l \div d =$ about 35, as before mentioned.

The formula is very simple to use, but for ready reference a table is appended to this article giving the safe intensities of loading per sq. inch for values of $l \div d$ from 15 to the upper limits.

Slender posts of circular section have slightly less rigidity than rectangular posts, and an appropriate allowance has been made for this in the table by operating upon the formula with a reducing factor, giving

$$p = b(1 - \frac{l}{45\,d}).$$

When slender posts or struts are built up of two or more separate timbers, bolted together side by side to form the cross section, the member as a whole will not develop the strength of a solid strut of the same proportions. This is due, among other things, to the effect of the bolts being insufficient to prevent altogether that comparatively minute flexure of the several components of the member which would take place were the components acting as so many independent struts; and failures have resulted in temporary timber work due to this point being overlooked. The strength efficiency of such built-up members as compared with struts of solid cross section will, of course, depend upon the arrangement of the component sticks and the nature of the bolting or other fastening; but for the cases such as usually occur in temporary timber construction, where, for example, three 3 in. by 9 in. firs are bolted side by side at intervals of several feet to form a 9 in. by 9 in. post, the member as a whole should not be credited with a carrying capacity much in excess of the sum of the safe strengths of three component timbers calculated as independent struts. This is especially the case where the component timbers break joint in the height of the post.

There is a difficulty in getting many unfamiliar with the behaviour of struts under test, to appreciate this comparative deficiency in carrying capacity, because they, having developed that rather uncertain faculty of judging the strength of members by perception, receive the impression that the built-up strut *looks stronger*, if anything, than a solid post of similar proportions. At one time the writer carried out some tests on built-up struts; and the photograph reproduced in Fig. 9 shows the typical manner of failure by crippling of the component members,† although the struts as a whole were shallower in a direction at right angles to the plane of buckling.

There is, of course, no serious objection to the use of built-up struts provided they are proportioned according to appropriate criteria;

† As the rupture of the fibres can only be seen by delicate markings in the original photograph the reproduction has been touched up to give a clearer indication.

FIG. 9.

and in the generality of cases which occur in temporary timber construction a sufficient margin of safety will be provided if the strut is calculated in accordance with principles already stated; treating each component of the cross section as an independent post credited with a carrying capacity 20 per cent. in excess of that given by the appropriate formula.

In the concluding part (IV) of these articles, bracing members; bolted and nailed joints, and considerations of structures as a whole, will be dealt with.

TABLE OF SAFE INTENSITIES OF LOADING FOR TEMPORARY TIMBER STRUTS, IN LBS. PER SQ. IN.

Kind of Timber.	Actual $l \div d$.	Rectangular Sections. Flat ended	Rectangular Sections. Non-Flat ended	Circular Sections. Flat ended	Circular Sections. Non-Flat ended
Pitch Pine, Oregon Pine, Or Douglas Fir, Oak ..	15	1000	855	950	790
	20	855	665	790	580
	25	710	475	630	370
	30	570	290	470	150
	35	425	90	310	—
	40	290	—	150	—
	45	145	—	0	—
	50	0	—	—	—
Northern Pine, Baltic Fir, Red and Yellow Deal	15	840	720	800	670
	20	720	560	670	490
	25	600	400	530	310
	30	480	240	395	130
	35	360	80	265	—
	40	240	—	130	—
	45	120	—	0	—
	50	0	—	—	—
Spruce, White Deal, Am. White Pine	15	700	600	660	550
	20	600	465	550	400
	25	500	330	440	255
	30	400	200	330	110
	35	300	60	220	—
	40	200	—	110	—
	45	100	—	0	—
	50	0	—	—	—

(To be concluded.)

Decorative and Industrial Art.

The second annual decorative and industrial art exhibition will take place from May 18 to May 28 (10 a.m. to 8 p.m. daily) in the Upper Hall of the Central Hall, Westminster. Viscount Burnham, president of the Faculty of Arts, will perform the opening ceremony at 11.30 a.m. on May 18. The exhibits will include works by a number of the vice-presidents; for example, panels in plaster by Mr. W. Reid Dick, poster designs by Mr. Norman Wilkinson, models of buildings by Sir Charles Allom, drawings by Mr. Oliver Bernard and Mr. John Hassall, and photographs and drawings of buildings by Mr. J. A. Gotch. Among the general exhibits will be leatherwork, decorative panels, woodwork, metalwork, pottery, hand-made glass, wood-carving, sculpture, porcelain, etching, bookbinding, printing, colour-prints, posters, hand-made silver ware, weaving, lace, and embroideries.

RENT RESTRICTION.

ONE of the most difficult sections to construe under the Rent Acts is section 2 of the Rent Act, 1923, and the difficulty is apparent on the face of it. Subsection (1) provides, "Where the landlord of a dwelling-house to which the principal Act applies is in possession of the whole of the dwelling-house at the passing of this Act or comes into possession of the whole of the dwelling-house at any time after the passing of this Act then from and after the passing of this Act or from and after the time when the landlord subsequently comes into possession, as the case may be, the principal Act shall cease to apply to the dwelling-house. Provided that where part of a dwelling-house to which the principal Act applies is lawfully sublet, and the part so sublet is also a dwelling-house to which the principal Act applies, the principal Act shall not cease to apply to the part so sublet by reason of the tenant being or coming into possession of that part, and, if the landlord is in or comes into possession of any part not so sublet, the principal Act shall cease to apply to that part notwithstanding that a sub-tenant continues in or retains possession of any other part by virtue of the principal Act."

In our issue for December 31st last we endeavoured to summarise the effect of the decided cases on this subsection, but a recent case, Cohen *v.* Gold (*Weekly Notes*, April 2, 1927), appears further to have complicated the interpretation to be placed upon it. In that case the plaintiff had, in 1913, acquired an unexpired term in a lease of a house and he had occupied the whole house with his family until 1925, when he let off the ground floor, consisting of three rooms to the defendant upon a weekly tenancy. The nature of the lease acquired by the plaintiff is not stated in the report of the case. The plaintiff brought this action to recover possession of the three rooms he had let to the defendant on the ground that the house was decontrolled under section 2, subsection (1), of the Act of 1923, and he relied upon the case Dunbar *v.* Smith (1926, 1 K.B. 360; *The Builder*, December 25, 1925). He contended that, being in possession as owner or landlord of the whole house when the Act of 1923 came into operation, the house had been taken out of operation of the principal Act.

From the short report available the decision of the Divisional Court is not easy to follow, but it appears that it was held that at the time when the plaintiff was in physical possession of the whole house the three rooms were not a separate dwelling-house and there was no landlord or tenant as regards them and that the Act did not apply to a case where possession at the material time was not possession of a dwelling-house let separately, or possession by a landlord, and therefore, as the plaintiff was not in possession of the separate dwelling-house formed by these three rooms at the material time, there was no possession of the whole of the dwelling-house at the passing of the Act.

As we have said, the decision as at present reported is difficult to follow, for it appears to wipe out the whole of the first part of the subsection, "Where the landlord of a dwelling-house to which the principal Act applies is in possession of the whole of the dwelling-house at the passing of the Act," unless on the principal of Catto *v.* Curry (1926, 1 K.B. 460; *The Builder*, March 12, 1926), the plaintiff here was treated as a mesne tenant under the proviso, but the proviso to the section and the cases decided thereupon appear to contemplate part of the house being sublet at the time possession is acquired of the house and not to refer to the first part of the section relating to the whole house.

This case appears to raise a most important point. We have always understood that the intention of this section was to secure the gradual decontrol of houses and that where a person in the position of an owner or landlord "is in possession" (for the words used in the Act are not only "comes into possession"), that house is decontrolled and Rent Restriction ceases to apply to it, but the above decision seems to imply that if a landlord who has been either in possession at the passing of the Act of 1923 or who has subsequently come into possession, then sublets part of his house, Rent Restriction is revived.

AMERICAN COST-SAVING METHODS IN BUILDING

By A. W. B.

I have recently returned from an extensive tour of the United States and Canada, and among the places which I visited were the following: New York; Chicago; Philadelphia; Pittsburg; Baltimore; Lancaster, Pa.; Washington; several important cities in Connecticut; and Toronto, Canada. In my opinion perhaps the most remarkable evidence of American progress in the skilled and technical professions is furnished by the various trades associated with the building industry in that country. The advancement made in methods of construction; the extent to which machinery is successfully used to shorten the time necessary for carrying out the work and keeping the cost low; the improvements made in planning, coupled with the labour-saving devices that are so extensively employed, and by means of which the occupants of the finished building have so many valuable advantages placed at their disposal, all provide evidence of change, improvement, and advancement, for which even the motor-car industry cannot furnish a parallel.

Americans do not rush in carrying out their various tasks, as we British generally think they do; in fact, my observations satisfied me that they rush even less than we do; but they are fully aware of the enormous value of method, and they are masters of its employment to the fullest extent possible. There is more method, and consequently less waste: in other words, the hours of labour in America are utilised in a manner which enables the maximum output to be obtained without putting any undue strain upon the workers.

The three main factors which I think are responsible for the advancement and success of the American building industry are:—

(1) A free, open, and friendly understanding between the employer and the employed.

(2) Better co-ordination; all trades working together to secure progress without hindrance.

(3) The extensive employment of all kinds of labour-saving machinery—"labour-saving" is a misleading term; the proper term to use would be labour-aiding machinery.

1. In spite of well-organised and powerful trade unions on the one hand, and a considerable number of "open shops" on the other, there is comparatively little friction, and that masters and men get on very well together; this may be due, in a large measure, to the American educational system, under which every intelligent child may pass through the elementary schools, and proceed directly to the high schools. American boys and girls who have successfully passed through the elementary schools are given free education in the high or secondary schools, a fact which accounts for the more extensive knowledge of economics and of the principles that govern modern business operations, that is possessed by the ordinary American citizen. Masters and men, having both received similar advantages in education, are generally able to survey matters connected with industry and business from the same standpoint. The educational factor may also account for the spirit of comradeship that is such a noticeable feature in American industry; this comradeship exercising a beneficial influence over all classes, from the employer to the unskilled labourer.

2. America is pre-eminently the land of the sub-contractor; and unless there existed a high degree of co-ordination, the extraordinary rapid progress made in the construction of huge buildings would be impossible. Chicago is nearly one thousand miles distant from New York, but in both cities, and in other cities and towns also, I found, when looking over buildings in course of construction, that the various responsible men, and foremen, were keenly alive to the fact that it was greatly to the advantage of all concerned, that all should work together to secure unimpeded progress. In America the general foreman acts in a manner which may fittingly be compared with that of the conductor of an orchestra, in that he makes it his business to get all units to work together so that the desired result may be achieved.

It is to be regretted that the desire to work together does not exist to the same extent between the various sections of the building industry in this country. During the years that I have been connected with the trade, I have known cases where the general foreman has misdirected his energies to the extent of making matters unpleasant and difficult for the sub-contractor. I recall one particular instance in connection with a large building in the City of London, where, due to the

Jewellers' Building, Chicago.

fact that the general foreman would not interest himself in giving the exact floor levels, a sub-contractor found considerable difficulty in installing his appliances and fittings when the floors were completed. In another instance, the sub-contractor had to appeal to the architect before the general foreman would furnish him with the correct levels and other necessary particulars. In America such troubles are non-existent; as soon as the steel framework of a building is erected, the general foreman instructs one of his subordinates to put permanent marks thereon, by means of which anyone can ascertain the level of the finished floor; when the carcase walls are built, the marks are then supplemented by a level line struck along the inner side of the wall, this line being carried all round the building, and eventually all round each room and passage. The level line is usually placed at a height of three feet above the level of the finished floor, so that when anyone wishes to know the exact position of the finished floor, all that is necessary is to measure down the correct distance from the line given on the steelwork or on the wall. A similar system is in vogue in France and in other Continental countries, the line there being placed one metre above the finished floor level. Happily there is now gratifying evidence of better co-ordination in the building industry in this country, although we can still learn much from America in the matter of working together. Co-ordination means a reduction in the cost of production, without a reduction in the excellence of the finished product, the result being an increase of business, and a prosperous industry.

3. The extent to which machinery is used in the building trade in America is scarcely realised in this country. On a corner site having considerably less area than that upon which the London Mansion House stands, I saw two steam shovels at work tearing down basement walls, and later on excavating to a greater depth for the new building; these compact yet powerful machines have a bracketed shovel arm which makes it possible to operate them in a very restricted area. I asked one of the drivers if he could tell me the most confined area within which it was possible to employ such steam shovels; he answered, "If I have a clear space twenty feet square I can work it easily." The shovels travel on "caterpillars," and, in the early hours of the morning, I saw one travelling through the city under its own steam; on another occasion, when the traffic was at its height, I saw one being conveyed along Fifth Avenue on a low, specially constructed, motor lorry. The work accomplished by these compact machines is tremendous; during a conversation with a general foreman, I asked, "How do they compare with hand labour—the pick and the shovel, sledge and wedge?" "Compare with hand labour!" he exclaimed, "surely you don't think that hand labour can be compared with such appliances; there is no comparison between hand labour and the steam shovel!"

Another instance of the extensive use of machinery that came to my notice was in connection with the erection of the steelwork for a new hotel that has about the same ground area as that upon which the Carlton Hotel in London stands; four huge derricks were erected for the purpose, and the steelwork up to the seventh floor was completed within a fortnight.

When the carcase of a building is finished, electricity generally furnishes the motive power necessary to drive the machinery brought into use by the various trades. As the result of inquiries, I found that an abundant stock of spare parts is always kept on hand. The Americans do not attempt to patch up old machinery; in fact, old machinery is practically unknown—one type being discarded as soon as a more efficient type is placed on the market. If a part of any machine or appliance breaks, it is replaced by a new part; and unless there is unquestionable evidence of wanton carelessness, no questions are asked of the workman when a part breaks down; a new part is inserted and the work again proceeds. The foreman in charge of a central heating job whom I questioned concerning the cutting of threads on the ends of the pipes, showed me a stack of three dozen new dies, of various sizes, ready to insert in the stocks, and informed me that as many as eight new dies had been used in a single stock in one day, a statement which subsequent conversation with the workmen proved to be quite correct.

The American workman has no misgivings concerning the use of machinery; he is satisfied that its use is beneficial, and that it is greatly to his advantage to employ it to the fullest extent possible. Machinery enables the workman to produce easily, speedily, and at a low cost; and, due to there being an enormously increased demand for the output, the

employment of machinery means an increased demand for labour, and consequently less unemployment. America knows that it is a fallacy to regard machinery as an enemy of labour.

No better evidence of the wonderful results that may be achieved by the employment of forethought, method, co-ordination, machinery, and intelligent labour, could be given than that which is furnished by the erection of the new Jewellers' Building at the head of Wacker Drive, Chicago. This imposing structure is forty stories high, the main building consisting of twenty-three stories, the remaining seventeen stories comprising the so-called tower, which itself forms a capacious building, covering considerable area. The total height from pavement level to the top of the dome is 550 ft. The ground area covered is not extensive, yet there are over twelve acres of business floor space in the building, and there is a multi-story garage extending the whole of the 23 stories of the main building, which provides accommodation for 572 motor-cars; this storage is necessary because so many people in America—the employee as well as the employer—own their own motor-car. In American cities it is not an unusual sight to see young lady typists who go to and from their daily employment in their own small car. Below the street level are the engine rooms, extending under which are the boiler rooms and the necessary storage for fuel; then, lower still, is the low-level sub-basement.

The demolition of the old buildings occupying the site was started in May, 1925. The first steel stanchion was erected on October 9 following, and the last section completing the steelwork of the dome was placed in position on February 15, 1926. From foundations to dome, the average amount of steelwork erected and completed per day was close upon one hundred tons; that amount being considerably exceeded daily when erecting the steel which forms the framework of the 23 stories which extend to the base of the tower.

The masonry of the main building, and that of the first story of the tower—24 stories in all—was all completed by February, 1926, and in May—only three months later—the main building, from sub-basement to the base of the tower, was all ready for occupation. There are ten high-speed lifts, and one supplementary lift, in the main building; also two high speed lifts in the tower.

From the Records of the United States Weather Bureau we learn that the lowest winter temperature in Chicago is 23 degrees below zero; such a low temperature is unusual, but a temperature of 10 degrees below zero, which means 42 degrees of frost, may be experienced on a number of occasions during the winter months; this very low temperature would, of course, prevent any plasterers' work being carried out, or any other work that called for the use of cement or mortar, unless special means were adopted to combat the extreme cold. In the construction of the Jewellers' Building forethought, organisation, and co-ordination enabled the builders to keep the frost at bay.

As soon as the lower steelwork was in position, the boilers were installed; then, as the above-ground steelwork was erected, the steam heating mains were carried up in their permanent positions by the side of the stanchions; next followed the concrete floors, and the outer walls of brick-lined terra cotta. The radiators were then placed in position temporarily, and the building was heated to a temperature of about 55 degrees Fahr., which enabled all trades to proceed with their work in spite of an occasional 40 degrees of frost outside. No scaffolding was used for building the outside walls; but a number of long cradles, their ends touching, were hung by light steel cables from the higher steelwork. The men working in the cradles raise them by means of a winding arrangement, whenever they wish to work at a higher level.

A short description of the mechanical installation by means of which the motor-cars are placed in the garages on the various floors will be of interest.

A car is driven to the loading platform in front of one of the four special lifts; the owner then receives an identification disc, and the operator in charge removes a key from the master control, the key corresponding to the separate location in which it is intended to store the car. Without any further handling whatever, the car is run into the lift, taken up to the proper floor, and conveyed on a slide or floor traveller, to a fire- and thief-proof location that corresponds with the number stamped on the disc given to the owner. When the owner wishes to get the car out of the garage, he gives up the disc, and the operator again inserts the key in the master-control, and mechanism is brought into operation which, in about one minute, places the car at the owner's disposal. In front of the loading platform special means exist for the almost instantaneous removal of the exhaust fumes from the engine of the car; and the air in this part of the building is changed completely every two minutes.

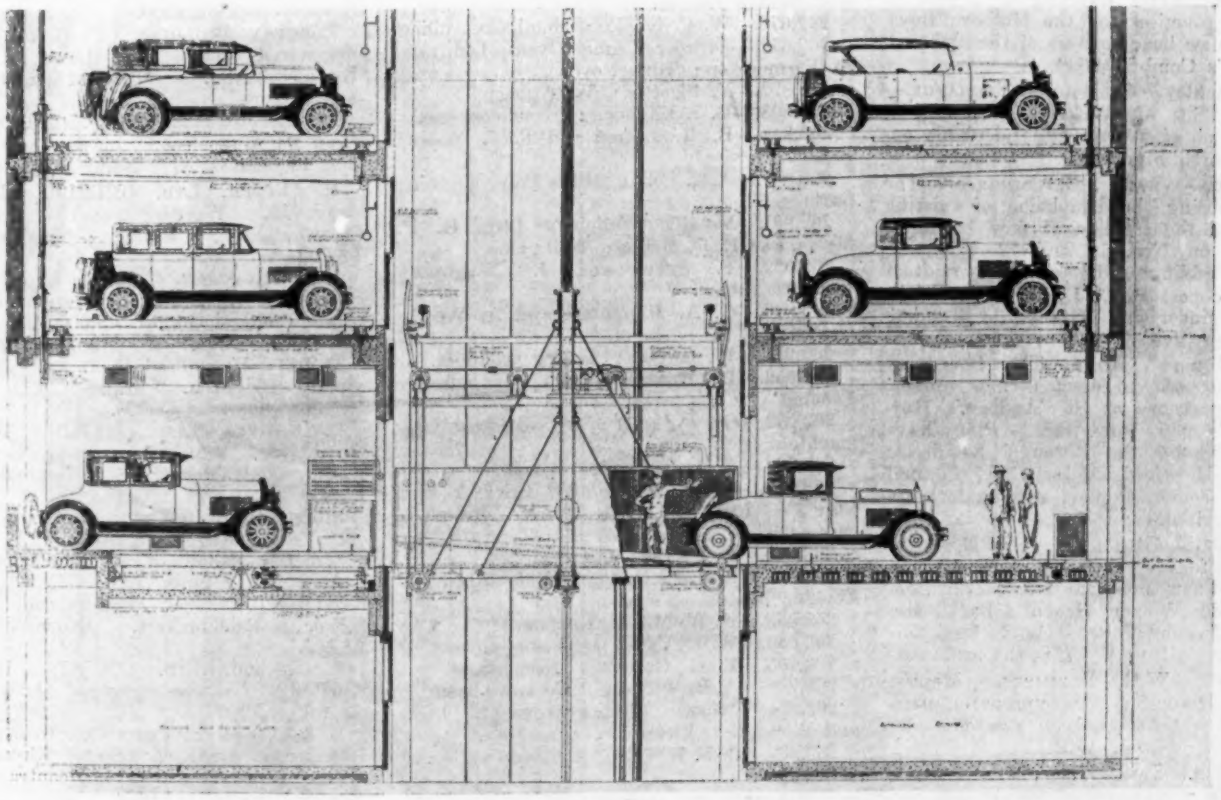
The Jewellers' Building is a monument to united, organised effort. The American workman does not rush, but he keeps continuously at his work, without continuous supervision. Moreover, he is keenly alive to the value of concerted action, the result being that all trades work well together, and excellent results are achieved. Certainly there is much that we may learn from America in connection with the matters just mentioned.

New Discovery of Diatomaceous Earth.

Dominion Government engineers, who were boring in the bed of the Fraser River, near Quesnelle, in British Columbia, have, it is reported, struck a large stratum of diatomaceous earth, which is to be developed by a local company commercially. This infusorial earth is used to form steam-pipe casings, bricks, tiles, etc., on account of its relative lightness and its impermeability to atmospheric change.

Centenary of William Blake.

In connection with the centenary of William Blake (1757-1827) and the Exhibition now being held at the Burlington Fine Arts Club, twenty drawings in water-colour or pencil by Blake in the collections of the Victoria and Albert Museum have just been placed on exhibition near the main entrance of the Museum. Among them are four important water-colour drawings from the Circulation Department of the Museum which have not hitherto been accessible to students in London. A copy of "The Book of Job," and other examples of Blake's work as an engraver on metal and wood, are also on view.



Jewellers' Building, Chicago.

[Section showing method by which cars are shifted into position and moved from storage rack to elevator and vice-versa.]

NEW BUILDINGS IN LONDON

Acton.—TECHNICAL INSTITUTE. — Messrs. Leslie and Co., Ltd., of Kensington, are the general contractors for this technical institute and trade school to be erected in Acton for the Middlesex Education Committee. The architect is Mr. H. G Crothall, F.R.I.B.A., architect to the Middlesex County Council.

Addiscombe.—CINEMA.—Messrs. W. L. Griffiths and H. V. Milnes Emerson, A.R.I.B.A., 14, Coleman-street, E.C.2, have prepared plans for a cinema at Addiscombe to accommodate 1,200 persons. The Ashford Builders Co., Ltd., 36, Bloomsbury-square, W.C.1, are the general contractors.

Aldgate.—REBUILDING. — The "Golden Lion" public-house, Cannon Street-road, E., is being rebuilt by Messrs. T. Stevens, Ltd., for the brewers, Messrs. Taylor, Walker and Co., Ltd. The constructional steelwork is being supplied by Messrs. Young and Co., of 6, Queen Anne's Gate, Westminster, S.W.1.

Bexley.—NURSES' HOME.—The L.C.C. have sanctioned the expenditure of £20,175 for the provision and equipment of a nurses' home at Bexley mental hospital. Plans have been prepared for a detached nurses' home of three stories to house 67 women nurses.

Croydon.—SUB-STATION.—The Electricity Committee has received the sanction of the Electricity Commissioners to a loan of £630 for the purchase of a site for a sub-station at rear of 174, High-street. Plans are being prepared by the Electrical Engineer, Mr. A. C. Cramb, M.I.E.E.

Harlington.—ELEMENTARY SCHOOL. — An elementary school is to be erected in New-road, Harlington, for the Middlesex County Council. Their architect, Mr. H. G. Crothall, F.R.I.B.A., is preparing the plans.

Harrow Weald.—SECONDARY SCHOOL.—A site for a secondary school has been acquired at Brook's-hill, Harrow Weald, by the Middlesex County Council. Their architect, Mr. H. G. Crothall, F.R.I.B.A., is to prepare the plans.

Lamb's Conduit-street.—BOYS' CLUB.—The Harpur Trust, which governs Bedford School and owns an estate in Holborn, London, has passed a scheme for building at a cost of £7,000 new premises for the Holborn Boys' Club. The new headquarters of the club will be in Lamb's Conduit-street.

North Finchley.—TELEPHONE EXCHANGE.—The H.M. Office of Works is proposing to erect a branch post-office and telephone exchange at North Finchley.

Paddington.—WHARF BUILDINGS. — The B.C. is proposing the demolition of existing buildings and the erection of new buildings and stables on Nos. 11 and 12 Wharves, Northside, Paddington Basin. The architect is Mr. B. Cooper, P.A.S.I., L.R.I.B.A., the Borough Engineer and Surveyor. Tenders are now being invited.

Poplar.—NURSES' HOME.—The Board of Guardians propose to erect a new nurses' home and mortuary at St. Andrew's Hospital, Levon's-road, Bow, E.3. Plans have been prepared by the Borough Architect, Mr. Harley Heckford, M.Inst.C.E., Council Offices, High-street, Poplar, and tenders are now being invited.

Regent's Park.—BUILDING.—H.R.H. Princess Mary is to lay the foundation stone on June 9 of the new and final wing to the Bedford College for Women, Regent's Park. Mr. O. Maxwell Ayrton, F.R.I.B.A., 3, Verulam-buildings, Gray's Inn, W.C., is the architect.

St. Giles', W.C.—PREMISES. — Messrs. Nicholas and Dixon-Spain have prepared plans for premises to be erected on a site at 48, High-street, St. Giles', W.C.

Stamford Hill.—SYNAGOGUE.—Mr. G. Coles, F.R.I.B.A., of 40, Craven-street, W.C.2, has prepared plans for a new synagogue upon the eastern side of Margaret-street, Stamford Hill, N., for the committee.

PATENTS.

APPLICATIONS PUBLISHED.*

262,033.—W. A. Cloud: Grinding mills.
262,171.—S. A. Bennett: Roads.
262,189.—H. Schafer: Linings for mines and tunnels.
262,195.—J. E. Evans-Jackson (G. H. Whittle): Plaster.
262,224.—F. Mulligan: Bricks.
262,231.—G. Schlesinger: Method of producing cylindrical formations or hollow bodies from veneer or thin sheet wood and apparatus for use in connection therewith.
262,232.—J. H. Ditter: Mortar.
262,252.—Ransomes & Rapier, Ltd., and P. D. Ionides: Charging concrete.
262,267.—R. Hickton and R. G. Hickton: Bricks.
262,280.—D. G. F. Drummond: Device for heating water systems, circulating or otherwise.
262,284.—J. Dougall & Sons, Ltd., and W. B. Mitchell: Fireplaces.
262,293.—T. Robinson & Son, Ltd., and C. J. Robinson: Wood planing, moulding and like machines.
262,313.—D. M. R. McGubbin: Cement or solution and methods of using the same.
262,315.—H. Schuster: Floorings.
262,322.—W. Savage and Ruston & Hornsby, Ltd.: Excavating machines.
251,621.—P. Allaire: Reinforced concrete.
262,490.—W. E. Roberts: Construction of fireplaces, chimney-breasts and chimneys.
262,501.—W. Savage, F. H. Livens and Ruston & Hornsby, Ltd.: Excavating machines.
262,512.—Airship Guarantee Co., Ltd., and B. N. Wallis: Riveting of metal girders.
262,525.—Vickers, Ltd., and L. D. Parker: Rotary kilns for burning cement.
262,536.—W. Quick, S. E. Thomas and F. W. Berwick: Devices for controlling windows.
262,548.—J. & F. Howard, Ltd., and L. W. Jones: Road-making machines.
262,610.—W. Keeble: Sheet-metal frames or doors.
262,612.—Coalbrookdale Co., Ltd., and W. J. Jones: Domestic fire-grates.
262,647.—J. S. Withers: Blocks for building purposes.
262,658.—R. M. Cutts: Devices for modifying the recoil of firearms.
262,663.—G. F. Pittar: Metal sash frames and window frames.
262,676.—W. C. Kohler: Metal-sheet piling.
262,678.—Dressler Tunnel Ovens, Ltd., and O. Vermoreken: Tunnel ovens.
258,892.—V. Sigetter: Wall plugs.
243,308.—E. I. Lindman: Porus concrete.
262,848.—B. R. Allfree and P. J. Moore: Roads.
262,861.—J. E. Pollak (Miller Co.): Lighting fixtures.
262,891.—Metallic Wallplugs Ltd., R. P. Myers, and H. C. Meikle: Wall plugs.
262,932.—F. Sykes and J. Claughton: Domestic table.
262,940.—G. A. Hammond and A. Wood: Grates.
262,946.—W. L. Cole: Sawing machines.
262,952.—H. Russell and W. J. Russell: Fencing.
262,982.—G. Jaeger: Concrete-mixing machines.
262,983.—B. J. B. Corrie: Fencing.
263,039.—Stourbridge Glazed Brick & Fire Clay Co., Ltd., and F. H. Clark: Fire-place surrounds.
263,040.—J. H. Bennett: Stairs.
263,045.—A. J. H. Haddan (Moffats, Ltd.).—Cooking ranges.
263,065.—F. W. Miles: Roofing.
263,030.—W. G. Case: Domestic stoves.
263,205.—F. G. Garrett: Door hinges.
263,219.—A. B. Williams: Lavatory-basin.
263,254.—Jackson Electric Stove Co., Ltd., and F. Smith: Electric cooking-stoves.
263,257.—J. F. H. Crisp: Concrete walls and buildings.

* All these applications are now in the stage in which opposition to the grant of patents upon them may be made.

NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

JONES & CO. (CONTRACTORS), LTD. (220,722). Registered March 28. 8, Dumfries-place, Cardiff. Builders and Contractors, &c. Nominal capital, £500.

C. SIMMONS & CO. (220 716). Registered March 28. Estate agent, builder and property dealer. Nominal capital, £100,000.

HORTREES BUILDING CO., LTD. (220,687). Registered March 26. Builders and contractors, &c. Nominal capital, £1,000.

ALBANY BUILDING CO., LTD. (219,844). Registered February 23. Albany-road, Coventry. Nominal capital, £2,500.

KENT BUILDERS' SUPPLY CO., LTD. (219,860). Registered February 23. Builders' merchants, manufacturers of and dealers in slates and tiles, &c. Nominal capital, £1,000.

R. P. DAVIS & CO., LTD. (219,867). Registered February 23. Builders and contractors for the erection, decoration and repair of houses and dwellings, &c. Nominal capital, £15,000.

CANTERBURY GOLF CLUB, LTD. (219,848). Registered February 23. To provide golf links, a club house, and other conveniences.

CONWOOD SUPPLY CO., LTD. (219,913). Registered February 25. Builders and general merchants. Nominal capital, £1,000.

BIRCHALL BROS., LTD. (219,909). Registered February 25. Darlington-street, Middlewich. Builders and contractors. Nominal capital, £6,000.

LUNDWOOD DEVELOPMENT CO., LTD. (219,894). Registered Febuary 24. Manufacture bricks and tiles, &c. Nominal capital, £7,000.

BILHAM & KILNEY, LTD. (220,124). Registered March 7. 68, Aldersgate-street, E.C.1. Builders, decorators and sanitary engineers, &c. Nominal capital, £500.

VALK ROOFING TILES, LTD. (220,103). Registered March 5. 16, St. Helen's-place, E.C.3. Manufacturers of and dealers in tiles, bricks and slates, &c. Nominal capital, £1,000.

W. J. DAWSON & CO., LTD. (220,104). Registered March 5. General merchants, contractors, manufacturers and engineers, &c. Nominal capital, £500.

TORQUAY BUILDING CO., LTD. (220,074). Registered March 4. Lower Union-lane, Torquay, Devon. Builders and house decorators, &c. Nominal capital, £3,000.

ROOKHOPE GANISTER, LTD. (220,100). Registered March 5. Quarry masters and stone and lime merchants, &c. Nominal capital, £1,500.

H. ROPER, LTD. (221,319). Registered April 19. Weetworth-avenue, Leeds-road, Glasshoughton. Builder. Nominal capital, £5,000.

J. J. HODGSON & SONS, LTD. (221,240). Registered April 14. Builders and contractors. Nominal capital, £5,000.

ADAMS BROS. & BROADBRIDGE, LTD. (221,218). Registered 11 and 12. Trafalgar-street, Brighton. April 14. Builders. Nominal capital, £2,000.

C. GROVES, LTD. (221,225). Registered April 14. Builders, general and public works contractors, &c. Nominal capital, £5,000.

SHREWSBURY BUILDING CONTRACTORS, LTD. (221,308). Registered April 19. Building contractor. Nominal capital, £1,000.

A. HONE & SONS, LTD. (221,290). Registered April 19. 195, Malpas-road, Brockley, S.E.4. Brickmakers. Nominal capital, £3,500.

E. SPARGO, LTD. (221,317). Registered April 19. Granite merchant, &c. Nominal capital, £3,000.

E. & D. CONSTRUCTION CO., LTD. (221,107). Registered April 9. Spital Cross, Edenbridge, Kent. Builders and contractors, &c. Nominal capital, £1,000.

RIVER SAND AND GRAVEL CO., LTD. (220,726). Registered March 28. 3, Cable-street, Liverpool. Nominal capital, £2,000.

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Masons	Brick-layers.	Car-penters Joiners	Plas-terers.	Slaters.	Plum-bers.	Pain-ters.	Lab-ourer.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Alfreton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Alnwick	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashford (Kent)	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Ashington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Aylesbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Ayisham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Banbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barnstaple	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Basingstoke	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bath	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bedford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Berwick	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bexhill	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bournemouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bradford-on-Avon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Braintree	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Brentwood	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bridgwater	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Bridlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Brighton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bromsgrove	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bromyard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Bungay	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burton-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Buxton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Cambridge	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Canterbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Carlisle	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chatham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5	1/1½
Chelmsford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cheltenham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chorley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cirencester	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/1
Clacton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cranbrook	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Cromer	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Deal	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Denbigh	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Devizes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Dewsbury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dorchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Dorking	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Dover Court	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Driffield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Droitwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Dudley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Eastbourne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
E. Glam. (Mon. Val)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ely	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Exeter	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½
Exmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Fakenham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Felix-towe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Folkestone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Frome	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Glossop	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Gloucester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Godalming	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Goole	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Gosport	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Great Yarmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Guildford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harpenden	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hatfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hednesford	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Hereford	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Herne Bay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hertford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hitchin	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hoddesdon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Holt	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Huddersfield	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hunstanton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Huntingdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Isle of Wight	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Ipswich	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Keighley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kettering	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Kidderminster	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
King's Lynn	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Lancaster	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Leamington Spa	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leighton Buzzard	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Littlehampton	1/5	1/5	1/5	1/5	1/6	1/5	1/5	1/1
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
London:								
12 m. radius	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/4½
12-15 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8½	1/4
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Lowestoft	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Macclesfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Maidstone	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Malvern	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Margate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Market Harb'rough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Matlock	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Melton Constable	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Melton Mowbray	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newark	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Newbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newcastle-ur-Lyme	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
New Forest	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Newmarket	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Nuneaton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Paignton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Peterborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Portsmouth	1/6	1/6	1/5	1/6	1/6	1/6	1/6	1/1½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ramsgate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Redcar	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Redditch	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Reigate	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Retford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Ripon	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Rochester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Rugby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Saffron Walden	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
St. Albans	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Helens	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Sawbridgeworth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Saxmundham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sevenoaks	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Sittingbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Southampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Southend-on-Sea	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stevenage	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stourbridge	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Stourport	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Stowmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Stratford-on-Avon	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stroud	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5	1/1½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swaffham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swindon	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Tamworth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Taunton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Thetford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Torquay	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Totnes	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/1
Trowbridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Tunbridge Wells	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Uttoxeter	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Walsall	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wallsend	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Warminster	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Warwick	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wells (Norfolk)	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Welwyn Gar. City	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Weston-sup.-Mare	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Weymouth	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/1
Whitby	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Winchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Wisbech	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Woodbridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Worksop	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Worthing	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Wrexham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wroxham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Wymondham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
York	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½

(For rates of wages in the Building Trade in Scotland, see page 834.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c. may be obtained

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

MAY 23.—**Belfast.**—PAINTING.—Painting Belfast passenger station, for the Great Northern Railway Co. Engineers' offices, Dublin or Belfast. Dep. £1 1s.

MAY 23.—**Canterbury.**—SCHOOL.—Practical Instruction Materials for Boys. T.C.

MAY 23.—**Edinburgh.**—PAINTING, PLUMBING AND ELECTRIC INSTALLATION.—Work at various schools, for the E.A. John Stewart, Executive Officer, Education Offices.

MAY 23.—**Glasgow.**—SUB-STATION at Kird-st. and Well-st., Calton, for Corporation. Electrical E., 75, Waterloo-st.

MAY 23.—**Killester (Co. Dublin).**—SCHOOLS.—Erection of National schools. J. J. Robinson, F.R.I.A.I., 8, Merrion-sq., Dublin. Dep. £2.

MAY 23.—**Prestwick.**—HOUSES.—76 houses at Glenburn and New Prestwick sites. Burgh Engineer's Office, Town Hall. Dep. £1 1s.

MAY 23.—**Sandwich.**—EXTENSION.—Of the Sir Roger Manwood's Grammar School, Sandwich, for the Kent E.C. W. H. Robinson, F.R.I.B.A., Room 69, Sessions House, Maidstone. Dep. £2 2s.

MAY 23.—**Wakefield.**—PAINTING.—Painting, etc. at Cardigan Sanatorium, Carr Gate, nr. Wakefield, for County Council of the West Riding. West Riding Architect, County Hall.

MAY 23.—**West Riding.**—RECONSTRUCTION.—Strengthening and partial reconstruction of Nostell Bridge for C.C. West Riding Surveyor, County Hall, Wakefield. Dep. £1.

MAY 24.—**Bury.**—WORKSHOP.—Workshop in Millett-st., for C.B., in two sections: (a) structural steelwork; b) brickwork. H. Simmonds, E. and Gen. Manager, Gasworks, Elton.

MAY 24.—**Cheadle and Gatley.**—HOUSES.—Erection of 26 houses, for U.D.C. J. Fothergill, A.M.I.C.E., Council Offices, High-st., Cheadle. Dep. £2 2s.

MAY 24.—**Cork.**—HOUSES.—4 houses for senior married officers at Collins Barrack, for Commissioners of Public Works.

MAY 24.—**Dublin.**—FLATS.—40 flat dwellings on Crabbe-la. area, facing Upper Mercier-st. City Architect's Department, Exchange Buildings, Lord Edward-st. Dep. £2.

MAY 24.—**Glasgow.**—GARAGE.—For electric vehicle at the Refuse Power Works, Govan, for Corporation. Office of Public Works, 64, Cochrane-st. Dep. £2 2s.

MAY 24.—**Great Bookham.**—HOUSES.—26 Cottages and construction of road at Guildford Road, Great Bookham, for Epsom R.D.C.O. A. Pratley, Surveyor, Ashley House, Epsom.

MAY 24.—**Haslingden.**—MATERNITY HOME.—Alterations and extensions to the administrative block at Moorland Infirmary, Rawtenstall, for Guardians. Mr. W. Hemingway, A.R.I.B.A., Union Offices, Higher Pike Law, Rawtenstall. Dep. £2 2s.

MAY 24.—**Kilferagh.**—SCHOOL.—Erection of Kilferagh National School, Co. Clare, for the Commissioners of Public Works. Rev. M. Breen, P.P., Kilkee. Dep. £1.

MAY 24.—**Kilkenny.**—BRIDGE.—Reconstruction of Mountgarrett Bridge, for County Council.

MAY 24.—**Leeds.**—CONVENIENCES.—Erection of conveniences at Compton-rd. Rest Garden, for Corporation. W. T. Lancashire, C.E., Municipal Buildings.

✱MAY 24.—**London, S.W.6.**—ALTERATIONS.—To the Palace-rd. Congregational Sunday School, Fulham. B. A. Cooper & Son, architects, Central-chambers, Kettering.

MAY 24.—**Stoke D'Abernon.**—COTTAGES.—12 cottages and construction of road at the Tilt, Stoke D'Abernon, for Epsom R.D.C. F. A. Pratley, Surveyor, Ashley House, Epsom.

MAY 24.—**Stratford.**—EXTENSION of "Maryland" Telephone Exchange, for the Commissioners of His Majesty's Works, Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

MAY 24.—**Willesden.**—HOUSE.—House for the Deputy Master at the Park Royal Hospital, Acton-la., N.W.10, for B.G. A. Saxon Snell and Phillips, FF.R.I.B.A., 9, Bentinck-st., Manchester-sq., W.1. Dep. £5.

MAY 25.—**Birmingham.**—TELEPHONE EXCHANGE.—Erection of, for the Commissioners of His Majesty's Works, Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

✱MAY 25.—**Cuckfield.**—COTTAGES.—30 cottages in the Main-rd., Hassocks, in the Parish of Clayton, for R.D.C. L. Robinson, Council Offices, Boltro-rd., Haywards Heath. Dep. £2 2s.

MAY 25.—**Killenagh.**—EXTENSIONS.—Enlarging Killenagh National School, Co. Kerry, for the Commissioners of Public Works. T. J. Lyne, Adm., Annascaul, Tralee. Dep. £1.

MAY 25.—**Kilmeedy.**—SCHOOL.—Kilmeedy National School, Co. Limerick, for the Commissioners of Public Works. Rev. J. O'Gorman, P.P., Kilmeedy, Newcastle West, Ireland. Dep. £1.

MAY 25.—**Poole.**—GREEN HOUSE.—Green House at Poole Park, for the Corporation. E. J. Goodacre, A.M.Inst.C.E., B.E., Municipal Offices.

MAY 25.—**Ramsgate.**—FENCING AND GATES.—Supply and erection of, for the Corporation. The Borough Engineer, 2nd Floor, Albion House, Ramsgate.

MAY 26.—**Cardiff.**—HOUSES.—Erection of 8 houses at Compton-st., for C.C. A., City Hall. Dep. £2 2s.

MAY 26.—**Coronea.**—SCHOOL.—Erection of Coronea National School, Co. Cavan, for the Commissioners of Public Works. Very Rev. James Judge, P.P., V.F., Killeshandra. Dep. £1.

MAY 26.—**Latnamard.**—SCHOOL.—Erection of Latnamard National School, Co. Monaghan, for the Commissioners of Public Works. Rev. T. Maguire, P.P., Latnamard, Newbliss, Ireland. Dep. £1.

MAY 26.—**London (Primrose Hill).**—TELEPHONE EXCHANGE.—At Primrose-hill, N.W., for H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners).

✱MAY 26.—**London, S.E.1.**—DECORATIONS.—Internal redecoration of schools' infirmary and engineers' shops, etc., at the schools, Wickham-rd., Shirley near Croydon, for the Guardians of the Parish of Bermondsey. Henry H. Reeve, Clerk, Guardians' Offices, 283, Tooley-st., S.E.1. Dep. £5 Bank of England note.

MAY 26.—**Plympton St. Mary.**—HOUSES.—22, in pairs, at Eggbuckland, for R.D.C. Council's Engineer at Underwood House. Dep. £2 2s.

MAY 26.—**Primrose Hill.**—TELEPHONE EXCHANGE.—Erection of, for the Commissioners of His Majesty's Works, Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

MAY 27.—**Ardrossan.**—HOUSES.—12 semi-detached houses at the M'Kellar-av. site, for T.C. John C. Hunter, A., 15, Barr-st. Dep. £1 1s.

MAY 27.—**Edinburgh.**—HOUSES.—388 flatted houses to be erected at Gorgie-rd. site for T.C. E. J. MacRae, A.R.I.B.A., C.A., City Chambers.

✱MAY 27.—**London, N.15.**—SCHOOLS EXTENSION.—At Devonshire-hill, White Hart-lane, for the Tottenham Education Committee. C. E. Blackbourn, F.R.I.B.A., Architect, 34, Finsbury-sq., E.C.2. Dep. £3 3s. Cheques, etc., should be made payable to "The Clerk, Tottenham Education Committee."

✱MAY 27.—**London, N.W.1.**—SHEDS.—Erection of 50 tram sheds at the Brookfield Housing Estate, Highgate, for the St. Pancras Borough Council. F. V. Creed, Town Clerk, Town Hall, Pancras-rd., N.W.1.

MAY 27.—**Merthyr Tydfil.**—HEATING INSTALLATION.—Heating, domestic hot water, and steam installation for the Workhouse Infirmary, for the Guardians. Herbert Brown, 2, Park-gro., Cardiff. Dep. £2 2s.

MAY 27.—**Stirling.**—HOUSES.—96 at Bannockburn-rd., for T.C. A. H. Goudie, B.E. Dep. £1.

MAY 28.—**Newquay.**—RESIDENCE.—At Porth Veor, near Newquay. John Ennor, A., 61, Tower-rd.

✱MAY 28.—**Paddington, W.2.**—DEMOLITION AND CONSTRUCTION WORK.—Demolition of existing buildings, in two sections, and the erection, similarly in two sections, of new wharf buildings and stables (cube, approximately 100,000 ft.), of Nos. 11 and 12 Wharves, for the Metro. Boro. Council of Paddington. Borough Engineer and Surveyor, Town Hall. Dep. £1 1s. to the Borough Treasurer.

MAY 29.—**Stoke-on-Trent.**—EXTENSIONS.—Extensions to the administrative quarters at the infectious diseases hospital, for T.C. Elijah Jones, A., Albion-st., Hanley.

MAY 30.—**Aylesbury.**—DECORATIONS.—Decoration etc., of 44 houses at Southcourt, for T.C. Wm. Harold Taylor, B.E. and S., Town Hall.

MAY 30.—**Borden.**—SCHOOL.—Erection of Grammar school for boys, for the Kent Education Committee. W. H. Robinson, F.R.I.B.A (Room 69), Sessions House, Maidstone. Dep. £2 2s. (Cheques payable to the Kent Education Committee and crossed "National Provincial Bank, Ltd.")

✱MAY 30.—**Hornsey, London, N.**—SCHOOL.—Erection of, for 844 children on a site adjoining Coldfall-av., Muswell-hill, for the Hornsey Education Committee. H. Carter Pegg, F.R.I.B.A., 35, Parliament-st., Westminster, S.W.1. Dep. £1.

MAY 30.—**Ince-in-Makerfield.**—SCHOOL.—Council school in Peel-st., off Manchester-rd., Higher Ince, to accommodate 720 scholars, for U.D.C. W. C. Ralph & Son, Leader's Buildings, King-st., Wigan. Dep. £1 1s.

MAY 30.—**London.**—DWELLINGS.—Four blocks for L.C.C. at Wapping estate, Stepney. Architect to the Council, County Hall (Room No. 3), Westminster Bridge, S.E.1. Dep. £2.

MAY 30.—**Newport, Mon.**—HOUSES.—114 houses on the Cromwell-rd. housing site, for the Corporation. B.A., Town Hall. Dep. £3 3s.

✱MAY 30.—**Plymouth.**—HOUSES, ETC.—Erection of 12 houses (in brickwork) and construction of road and common drains, at rear of Henderson-pl., North Prospect Housing Estate, for the Borough Council, Corporation Housing Dept., Sun Buildings, Plymouth. Dep. £2 2s. Cheques to be made payable to the Borough Treasurer.

MAY 30.—**Torpoint.**—HOUSES.—20 houses (12 parlour and 8 non-parlour), on Union-rd. site, for U.D.C. Carder and Carder, 3, Buckland-tce., Plymouth. Dep. £2 2s.

MAY 30.—**Worsbro' Bridge.**—FOUNDATIONS.—Foundations of new ambulance hall, to include bricking and concrete, for Worsbro' District St. John Ambulance Division. J. W. Semley, newsagent, 51, Park-rd.

MAY 31.—**Chester.**—HOUSES.—26 houses on the Hoole-la. housing site, for T.C. Charles Greenwood, Assoc.M.Inst.C.E., C.E. and S. Dep. £3 3s.

✱MAY 31.—**Durham.**—SCHOOL.—Erection and completion of Nettlesworth new Council School to accommodate 240 scholars, for the Durham C.C. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

MAY 31.—**Leytonstone.**—CHILDREN'S CHURCH.—Converting portion of a budding at their Institution into a children's church, for the Bethnal Green Board of Guardians. The Clerk, Guardians' Administrative Offices, Bishop's-rd., E.2. Dep. £2 2s.

MAY 31.—**Llandudno Junction.**—TELEPHONE EXCHANGE.—Erection of, for the Commissioners of His Majesty's Works, Contracts Branch, King Charles st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

MAY 31.—**Tullamore.**—HOUSES.—8 at Tullamore, for the Irish Sailors' and Soldiers' Land Trust. R. E. Beckerson, chief clerk, Irish Sailors' and Soldiers' Land Trust, Dublin. Dep. £5 5s.

✱MAY 31.—**Uxbridge, Middlesex.**—HOUSES.—Erection of 13 pairs and 8 blocks of houses, and for roads and sewers, &c., on the Rockingham Housing Estate, Uxbridge, for the U.D.C William L. Eves, F.R.I.B.A., F.S.I. Council's Architect, 54, High-st., Uxbridge. Dep. £2 2s.

MAY 31.—**Uxbridge.**—PAINTING, ETC.—Exterior painting and repair of 42 houses on George-st. housing estate and of 73 houses on their Hillingdon-rd housing estate, for U.D.C. William L. Eves, F.S.I., 54, High-st.

JUNE 1.—**Belfast.**—EXTENSIONS.—Goods shed on west side of Dufferin Dock, for Harbour Commissioners. T. S. Gilbert, E.

JUNE 1.—**Carshalton.**—PAVILION.—Brick pavilion and public convenience for both sexes at Stanley Park, for U.D.C. W. Willis Gale, A.M.I.C.E., District Council Offices, The Grove.

JUNE 1.—**Chigwell, Essex.**—TELEPHONE EXCHANGE.—Erection of, for the Commissioners of His Majesty's Works, Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

JUNE 1.—**Manchester.**—SCHOOL.—Infants' school and alterations to existing Blackley Municipal school, for E.C. Deansgate Offices of the Education Committee. Dep. £1 1s.

✱JUNE 1.—**Northampton.**—HOUSES.—Erection of 84 houses of brick construction on the Weedon-rd. housing scheme for the Housing and Town Planning Committee of the County Borough. Alfred Fidler, M.Inst.C.E., Borough Engineer, Guildhall, Northampton. Dep. £5 (crossed cheques to be made payable to Northampton Corporation).

JUNE 1.—**Kempton.**—HEATING AND HOT WATER.—Low pressure hot water heating system at Kempton Park Rapid Filters. Heating installation buildings for the Metropolitan Water Board. Chief Engineer, Offices of the Board (Room 156), 173, Rosebery-av., E.C.1, upon forwarding a stamped addressed brief envelope.

JUNE 2.—**Bermondsey.**—DECORATIONS.—Internal redecoration of schools infirmary and engineer's shops, etc., at the schools, Wickham-rd., Shirley, near Croydon, for B.G. Newman & Newman, A. Dep. £5.

✱JUNE 2.—**London, E.11.**—BUILDING WORK—Erection of a new dining hall, bakery and workshops and certain other work connected therewith, at the Central Home, Union-rd., Leytonstone, E.11, for the Guardians of West Ham Union. L. E. Fraquet, Clerk to the Guardians, Board Room, Union-rd., Leytonstone, E.11. Dep. £1 Treasury note.

JUNE 2.—**London, W.9.**—PAINTING AND REPAIR WORK, at the Paddington Infirmary, 285, Harrow-rd., W.2, for the Paddington Board of Guardians. P. Biddulph Hancock, Clerk to the Guardians, Guardians' Offices, 313-319, Harrow-rd., W.9.

✱JUNE 2.—**Peterborough.**—HOUSES.—Erection of 50 on the Mayor's-walk estate in the city, for the City Council. City Engineer, 6, Long Causeway, Peterborough. Dep. £3 3s.

✱JUNE 2.—**Swadlincote.**—HOUSES, ROADS AND SEWERS.—Construction of 60 houses, road, sewer, fencing and drainage, for the U.D.C. Baines & Prowis, A. & L.R.I.B.A., 22, Friar-lane, Leicester. Dep. £2.

JUNE 3.—**Dublin.**—PLASTERING.—Plastering the domical ceiling at the Four Courts, Dublin, for the Commissioners of Public Works, T. Cassedy, Secretary, Office of Public Works. Dep. £1.

✱JUNE 7.—**Essex.**—SCHOOL.—Enlargement of the Wickford Council School, for the Essex County Council. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court, Chelmsford. Deposit £1 1s. to F. H. Owers, F.S.A.A., County Accountant, Duke-st., Chelmsford.

✱JUNE 7.—**Essex.**—SCHOOL.—Remodelling of the Thaxted Council School, for the Essex County Council. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court, Chelmsford. Dep. £1 1s. to F. H. Owers, F.S.A.A., County Accountant, Duke-st., Chelmsford.

✱JUNE 8.—**London, E.14.**—NURSES' HOME AND MORTUARY.—Erection of, at St. Andrew's Hospital, Devon's-rd., Bow, E.3, for the Guardians of the Poor of the Parish of Poplar. Harley Hickford, M.Inst.C.E., Architect, Council Offices, High-st., Poplar. Dep. £3 3s.

JUNE 8.—**London (Poplar).**—NURSES' HOME.—Nurses' home and mortuary at St. Andrew's Hospital, Levon's-rd., Bow, E.3, for B.G. Harley Heckford, M.Inst.C.E.A., Council Office, High St., Poplar. Dep. £3 3s.

✱JUNE 9.—**Essex.**—TELEPHONE EXCHANGE.—Erection of at Hadleigh, Rayleigh, Essex, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

JUNE 9.—**Maryport.**—HOUSES.—14 at Ellenborough, Maryport, for the U.D.C. H. Oldfield, L.R.I.B.A., A. and S., Workington.

JUNE 10.—**Cardiff.**—HEATING.—Central heating of Gladstone Council school by low pressure heating installation, for E.C. J. J. Jackson, Director of Education.

✱JUNE 10.—**Essex.**—TELEPHONE EXCHANGE.—Erection of at Hornchurch, Romford, for the Commissioners of His Majesty's Office of Works. Contracts

Branch, King Charles-st., London, S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

JUNE 10.—**Harrogate.**—POLICE HEADQUARTERS.—Erection of Claro Divisional Police Headquarters, for the West Riding of Yorkshire S.J.C. Percy O. Platts, A.R.I.B.A., C.A., County Hall, Wakefield.

JUNE 11.—**Hemsworth.**—CORRIDOR.—Covered communicating corridor at the Sanatorium, Brierley Gap, in the parish of South Kirkby, for Joint Hospital Committee. W. T. Lynam, A.M.I.C.E., S., Market Chambers.

✱JUNE 14.—**Brighton.**—NURSES' HOME.—Erection of a nurses' home at Parkhurst-av., for the Guardians of the Poor. E. Wallis Long, 6, Old Steine. Dep. £5 5s.

✱JUNE 18.—**Brighton.**—POWER STATION.—Erection of an extension to the Power Station at Southwick, near Brighton, for the Corporation. Wm. H. Overton, F.R.I.B.A., F.S.I., 22, Ship-st., Brighton. Dep. £5 5s.

✱JUNE 18.—**Brighton.**—STEELWORK.—Supplying and erecting constructional steelwork in connection with an extension to the Power station at Southwick, near Brighton, for the Corporation. Wm. H. Overton, F.R.I.B.A., F.S.I., 22, Ship-st., Brighton. Dep. £5 5s.

✱JUNE 23.—**London, S.W.1.**—INTERNAL PAINTING AND CLEANING.—At the Government Offices (Southern Block), Westminster, S.W.1., for the Commissioners of His Majesty's Office of Works, Contracts Branch King Charles-st., Westminster, S.W.1. Dep. £1 1s (Cheques payable to the Commissioners.)

JUNE 28.—**Portugal.**—ARSENAL.—Construction of a naval arsenal on the south bank of the river Tagus, for Portuguese Government. Portuguese Embassy.

JULY 18.—**Sydney.**—DESTRUCTOR.—Refuse destructor at Prymont, Sydney, for T.C. J. Davis, Consulting Engineer, 100, Victoria-st., S.W.1.

—**Burnlem.**—HOUSES.—Five houses and bungalow. A. Perry, 6, Waterloo-rd.

—**Harrogate.**—BUILDING WORK.—Shops, offices, stores, workshops, etc., situate in Cambridge-st. and Petersgate, for the Harrogate Gas Company. John Houfe, Albert-chbrs.

—**Saltash.**—REDECORATION.—Of St. Stephens-by-Saltash Parish Church. W. S. Rashleigh, Stoketon, Saltash.

—**Barnsley.**—HOTEL.—Hotel in Huddersfield-rd., for John Smith's Tadcaster Brewery Co., Ltd. Bertram Wilson, P.A.S.I., A. and S., High-st., Tadcaster. Dep. £2 2s.

—**Cleckheaton.**—REBUILDING.—Pulling down and rebuilding of "The Old House at Home," Northgate, Cleckheaton, for John Smith's Tadcaster Brewery Co., Ltd. Bertram Wilson, P.A.S.I., A. and S., High-st. Dep. £2 2s.

—**Hitchin.**—EXTENSIONS.—Alterations and additions to the casual wards at the Hitchin Poor Law Institution, for B.G. A. E. Passingham, C., 5, Bancroft.

—**Somerset.**—SCHOOL.—(a) Bridgwater New County School and Caretaker's Cottage; and (b) Extensions at Street—Elmhurst County School, for Somerset C.C. A. J. Toomer, C.A., Lloyds Bank Chambers, Weston-super-Mare. Dep. £2 2s.

ENGINEERING, IRON AND STEEL.

MAY 22.—**Dundee.**—CHAINS.—120 fathoms of mooring chain for the lightship and for Nos. 1 and 2 black buoys, for Harbour Trust. J. Hannay Thompson, M.Sc., M.Inst.C.E., General Manager and Engineer, Dundee, Harbour Trust.

MAY 23.—**Manchester.**—STEELWORK.—Constructional steelwork required for the extension of the substation in Great Ancoats-st. H. C. Lamb, Chief E. and Manager, Electricity Department, Town Hall. Dep. £1 1s.

MAY 23.—**Nottingham.**—PUMP HOUSE.—Erection of buildings, water receiving chamber, etc., at the Burton Joyce Works, for Corporation. T. Wallis Gordon, C.E. and S., Guildhall. Dep. £2.

MAY 24.—**Cranbrook.**—PIPING.—Construction of about 2¼ miles of pipe sewers, sewage disposal works and miscellaneous work connected therewith, for R.D.C. J. S. Alford, M.Inst.C.E., 11, Victoria-st., Westminster, S.W. Dep. £5.

MAY 24.—**Mountgarrett.**—RECONSTRUCTION.—Mountgarrett Bridge in reinforced concrete, with a steel opening span, and for contingent works, for Bridge Committee. T. Drew, Secretary to County Council and Bridge Committee, Kilkenny. Dep. £5 5s.

MAY 24.—**Wakefield.**—REINFORCED CONCRETE.—Following works in reinforced concrete in connection with the Ryburn pipe line:—Covered balancing tank, capacity one million gallons, at Barkisland. Gauge basins, etc., adjoining Ardsley reservoir, near Wakefield. Bridge No. 1, over Sir John Ramsden's canal at Bradley, near Huddersfield. Bridge No. 2, over the River Colne, near Bridge No. 1. Bridge No. 3, over the L.M.S. Railway, Warren-st., Dewsbury. Bridge No. 4, over the River Calder, Dewsbury. C. Clemesha Smith, M.Inst.C.E., Waterworks E., Town Hall. Dep. £2 2s.

MAY 25.—**India.**—STEEL.—Spring steel, for the directors, B.B. & C.I. Railway Company, 91, Petty France, S.W.1. Payt. 10s.

MAY 25.—**Leadgate.**—AERATION AND DRAINAGE TILES.—Approximately 1,550 sq. yds. aeration and drainage tiles suitable for percolating filter floors, for U.D.C. Y. J. Hunter, S., Council Office.

MAY 25.—**Walthamstow.**—STEELWORK.—Supply and erection of extension to repair shops at the Tramway depot, Chingford-rd., consisting of steel structure framework covered with corrugated iron, and to include the necessary concrete foundations, etc., for U.D.C. G. W. Holmes, A.M.Inst.C.E., Town Hall.

✱MAY 26.—**London, S.E.1.**—FIRE ESCAPE STAIRS.—Supplying and erecting four new fire escape stairs and repairing and painting seven existing fire escape stairs at the Bermondsey and Rotherhithe hospital, Lower-rd., Rotherhithe, for the Guardians of the Parish of Bermondsey. Henry H. Reeve, Clerk, Guardians' Offices, 283, Tooley-st., S.E.1. Dep. £5 Bank of England note.

MAY 27.—**Wilts.**—RECONSTRUCTION.—Reconstruction of Great Somerford Bridge, for C.C. George Powell, M.Inst.C.E., County Offices, Trowbridge. Dep. £2.

MAY 30.—**Halifax.**—IMPROVEMENTS.—Construction of embankments, &c., for the formation of reservoirs with ancillary works in the Gorple Valley, for C.B. G. H. Hill and Sons, civil engineers, 40, Kennedy-st., Manchester. Dep. £5 5s.

JUNE 2.—**Bermondsey.**—ESCAPE STAIRS.—Supplying and erecting four new fire escape stairs and repairing and painting seven existing fire escape stairs at Bermondsey and Rotherhithe hospital, for B. G. Newman & Newman, Architects. Dep. £5.

JUNE 10.—**India.**—BRIDGEWORK.—About 2,860 tons of bridgework, for the Director-General, India Store Department, Branch No. 11, Belvedere-rd., Lambeth. Payt. 5s.

JUNE 11.—**Caldbeck.**—BRIDGES.—Construction in reinforced concrete of two new bridges and the widening of one bridge at Caldbeck, for Cumberland C.C. G. O. Lockwood, M.Inst.C.E., F.S.I., C.S. and Bridgemaster, the Courts, Carlisle. Dep. £2.

ROAD, SEWERAGE, AND WATER WORKS.

MAY 23.—**Ashborne.**—PIPES.—Laying of about 3½ miles of 7 in. and 3 in. cast-iron pipes and specials, together with valves, hydrants, meters, &c., at Rodsley, for U.D.C. Dr. Herbert Lapworth, E., 25, Victoria-st., Westminster. Dep. £3.

MAY 23.—**Dublin.**—PIPEWORK.—Supply and installation at Pigeon House Works of the necessary steam pipes, exhaust pipes, water pipes, circulating water pipes and valves for their proposed new 5,000 K.W. Turbo-Alternator, for C.B. Electrical Engineer and Manager, Electricity Offices, Fleet-st. Dep. £3 3s.

MAY 23.—**London.**—EXTENSION.—1,137 lin. ft. of 5 ft. 3 in. by 3 ft. 6 in. brick and brick and concrete sewer in Balham High-rd., with two side entrances and ventilators; the construction of a weir chamber and the supply and fixing of a timber flap in an existing chamber, in Wandsworth, for L.C.C. Chief Engineer, Old County Hall, Spring-gdns., S.W.1. Dep. £5.

MAY 23.—**London.**—SEWER.—Construction in tunnel, partly in compressed air, of about 3,140 lin. ft. of 5 ft. internal diameter cast-iron sewer from Springbank-rd. to Thornford-rd.; construction of a tumbling bay, six side entrances and ventilators, &c., in Lewisham for L.C.C. Chief Engineer, Old County Hall Spring-gdns., S.W.1. Dep. £10.

MAY 23.—**London (Camberwell).**—ROADWORKS.—Kerbing, channelling paving footways (artificial stone), and tarmacadam carriage-way in two new streets, for B.C. William Bell, Assoc.M.Inst.C.E., P.A.S.I., Town Hall, Peckham-rd., S.E.5.

MAY 24.—**Epsom.**—ROADS.—Construction of approximately 5,000 super yds. reinforced concrete carriageway on their housing site at Hook-rd. and Long Grove-rd., for U.D.C. Surveyor, 33, Church-st.

MAY 24.—**Epsom.**—STREET WORKS.—In connection with the extension of Bridle-rd., Epsom (length 213 ft.), for U.D.C. Surveyor to the Council, 33, Church-st.

MAY 25.—**Halstead.**—DRAINAGE.—Construction of about one mile of stoneware and cast-iron sewers of 9 inch and 7 inch diameter, together with manholes and other appurtenances, and for the construction of a pumping station and about one-third of a mile of 7 inch diameter cast-iron rising main, 2 settlement tanks, effluent carriers, effluent pipe, fencing, and other works at Earls Colne, for R.D.C. John Taylor & Sons, E.'s, Caxton House, S.W. 1. Dep. £5.

✱MAY 26.—**London, S.E.1.**—ASPHALTE PATHS.—Repairing, etc., at the schools, Wickham-rd., Shirley, near Croydon, for the Guardians of the Parish of Bermondsey. Henry H. Reeve, Clerk, Guardians' Offices, 283, Tooley-st., S.E.1. Dep. £5 Bank of England note.

MAY 28.—**Chester.**—FILTER.—Open slow sand filter at the Tower Works, Boughton, for Chester Waterworks Company. Wm. S. Moss, Secretary, 15, Newgate-st. Dep. £2 2s.

MAY 28.—**Huyton-with-Roby.**—CONVERSIONS.—Of 36 midden privies and 28 pail closets to water-closets, for U.D.C. R. J. Pritchard, Sanitary Inspector. Dep. £2.

MAY 30.—**Heywood.**—SEWERING.—18 in. diameter concrete pipe sewer in Middleton-rd., from the existing sewer in Charles-st., Hopwood for a distance of 400 lineal yards in tunnelling, together with manholes and contingent works for T.C. B.S.

MAY 30.—**Huddersfield.**—PIPING.—Construction of about 2,060 lin. yards of earthenware pipe and cast iron pipe sewers of internal diameters varying from 9 inches to 15 inches, for C.B. B.E. and S., 1, Peel-st.

✱MAY 30.—**Plymouth.**—ROADS.—Making up and completing of new roads (already ballasted) on "G" site, Section No. 3, North Prospect housing site, for the County Borough Council. Corporation Housing Dept., Sun Buildings, Plymouth. Dep. £2 2s. (Cheques to be made payable to the Borough Treasurer.)

MAY 31.—**Rochester.**—SEWERS.—Construction and laying of stoneware pipe sewers, for Corporation. William Law, Assoc.M.Inst.C.E., C.S. Dep. £5 5s.

JUNE 1.—**Tolleshunt Knights.**—CULVERT.—Reconstruction of Brook Hall culvert on the Tiptree-Tolleshunt D'Arcy road, for Essex C.C. County Accountant, County Offices, Chelmsford. Dep. £2 2s.

Competitions.

(See Competition News 802.)

Auction. Sales, Tenders, etc.

✱MAY 23.—**Cheadle, Staffs.**—W. S. Bagshaw & Sons will sell on the premises, The Cheadle (Staffs) Gravel Quarries, Ltd., Cheadle, the whole of the gravel crushing and washing plant, machinery and loose effects. Auctioneers, Uttoxeter.

MAY 23.—**Coventry.**—Leonard A. Ouston will sell re Motor Bodies and Sheet Metal, Ltd. (by direction of the Receiver for the Debenture Holders, Mr. S. Owen), at National Works, Holyhead-rd., Coventry, the entire Woodworking Plant by Wadkin, Motor Body Builder's Stock, &c. Auctioneers, 1-2, Waterloo-st., Birmingham.

✱MAY 24.—**Brighton.**—Henry Butcher Hall & Co. will sell, by order of W. Hill Hunter, Esq., F.C.A., Receiver for the Debenture Holders, re Builders (Hove), Ltd., on the premises, 13, Centurion-rd., Brighton, plant and stock of a builder and decorator, including 3 sectional contractors' offices. Auctioneers, 63 & 64, Chancery-lane, London, W.C.2.

MAY 24, 25 AND 26.—**Durham.**—Perry & Phillips, Ltd., will sell on the premises, Streatham Castle, near Darlington, Co. Durham, the whole of the interior and exterior fixtures and fittings previous to demolition of the fifteenth century castle; also the fabric of the castle will afterwards be sold for demolition (except a portion of the old rubble interior and exterior walls as clearly marked on Plan). Auctioneers, High-st., Bridgnorth.

MAY 26.—**Rickmansworth.**—Hillier, Parker, May & Rowden will sell at the London Auction Mart (unless previously sold by private treaty) freehold, High-st., Rickmansworth (late the Rickmansworth Brewery) with excellent warehouse or factory buildings, etc., vacant possession. Auctioneers, 27, Maddox-st., W.1.

MAY 31.—**London.**—Hampton & Sons will sell, by order of the Trustees of Admiral F. Harrison-Smith, deceased, Edgware, freehold residential and building properties, "Moor House" and "Lymes Farm," Little Stanmore, near Edgware, the properties thereon, in all about 60 acres. Auctioneers, 20, St. James's-sq., S.W. 1.

MAY 31.—**London.**—Thurgood, Martin & Eve will sell (unless previously sold privately) at the London Auction Mart, 155, Queen Victoria-st., E.C.4. Freehold building land, corner block at Streatham, 3 roods, 26 perches. Auctioneers, 27, Chancery-lane, W.C.2.

✱MAY 31.—**Tunbridge Wells.**—Perry & Phillips, Ltd., will sell by order of the Committee of the Tunbridge Wells General and Eye and Ear Hospitals, on the premises, Great Silverden, Mount Ephraim, Tunbridge Wells, interior and exterior fixtures and fittings, previous to the demolition of the mansion after the sale of fixtures and fittings. The fabric of the mansion will be sold for demolition. Auctioneers, 59, High-st., Bridgnorth, Salop.

✱JUNE 1.—**Newark-on-Trent.**—G. P. Fillingham, F.A.I., will sell at the "Clinton Arms" Hotel, Newark-on-Trent, "The Vale of Belvoir" Brick and Plaster Works, Newark, including cottages and building land. Auctioneers, 24, Pocklington's Walk, Leicester.

JUNE 9.—**Reading.**—Knight, Frank & Rutley in conjunction with Simmons & Sons at the Great Western Hotel, Reading (unless previously sold privately), freehold building plots forming part of the Bulmershe estate, Crockham Well Cottage, with land, 30 acres. Auctioneers, 20, Hanover-sq., London, W.1.

✱JUNE 15.—**London, W.1.**—Nightingale, Page & Bennett and Knight, Frank & Rutley, will sell by direction of Mr. H. V. Roe, at the Hanover-sq. Estate Room, freehold estate of over 130 acres, including residences, lodge, six cottages, etc., at Givon's-grove, Mickleham, Surrey. Auctioneers, N. P. & B., Eagle Chambers, Kingston-on-Thames, and K. F. & R., 20, Hanover-sq., London, W.1.

✱JUNE 16.—**Surrey.**—Nightingale, Page & Bennett will sell in lots, at the London Auction Mart, 155, Queen Victoria-st., E.C.4, building estate, known as Egmont Estate, Surbiton, area of over 130 acres. Auctioneers, Eagle Chambers, Kingston-on-Thames.

JUNE 21.—**London.**—Weatherall & Green will sell, at the London Auction Mart, 155, Queen Victoria-st., E.C.4, Adelphi Estate, Strand, within short distance of Charing Cross, freehold, nearly two acres in extent, comprising the historic Adelphi-ter. Auctioneers, 22, Chancery-la., W.C.2.

Public Appointments.

✱MAY 25.—**Peterborough.**—Temporary (Junior) Architectural Assistant required by the City Council. W. H. A. Court, A.M.Inst.C.E., City Engineer and Surveyor, Broadway, Peterborough.

✱MAY 27.—**Yorkshire.**—(1) Junior Architectural Assistant; (2) Junior Clerk of Works (temporary) required by the East Riding of Yorkshire County Council. County Architect, County Hall, Beverley.

✱MAY 30.—**London, E.**—Building Foreman in the Borough Engineer and Surveyor's Department required by the Borough Council of Bethnal Green. David J. Keep, Town Clerk, Town Hall, Bethnal Green, E.1.

MAY 30.—**London, W.1.**—Teacher in architectural design and allied subjects required at the Polytechnic, Regent-st., W.1. Director of Education, The Polytechnic, 309, Regent-st., London, W.1.

MAY 31.—**Wigan.**—Head of the Building Trades Department required at the Wigan and District Mining and Technical College. F. J. Harlow, M.B.E., B.Sc., at the College.

✱MAY 31.—**Yorkshire.**—Fully-qualified quantity surveyor's assistant required by the West Riding County Council of Yorkshire in the Quantity Surveyor's Department. Louis J. Newton, Lic.R.I.B.A., West Riding Quantity Surveyor, County Hall, Wakefield.

Crematorium for Ipswich.

Plans for the erection of a new Cemetery Chapel at Ipswich, in which a Crematorium will be incorporated, have been approved by the Burial Board. Mr. J. A. Sherman, of Ipswich, is the architect. The scheme is estimated to cost £6,000.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B.E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

ACCRINGTON.—The Committee considered and approved the following building plans: 2 houses in Whalley-road, for Houldsworth and Spencer; laundry, 105, Manchester-road, for H. Howarth; bungalow in Scott-street, Baxenden, for E. S. Ware.

BELFAST.—The following plans have been approved by the City Surveyor: villa in new street off Kensington-av., for J. Brown; architect, W. C. Maxwell; villa in Brookhill-pk., for A. McDowell; architect, T. Houston; 6 houses on Broadway, for T. L. Cole; additions to factory premises on Crumlin-rd., for W. Ewart & Sons; builders, McLaughlin & Harvey; 17 garages in Adelaide-av., for Cairns Bros.; architect, D. W. Boyd; alterations to premises on Old Lodge-rd., for J. Kingsmore; architect, J. McAlery; 6 villas in Thirlmere-gdns., for Thompson McCullough, builder; clubhouse in Ashfield-gdns., for the Jewish Social Tennis Club; architect, T. R. Eagar; 6 villas in Belgravia-av. and Ulsterville-pl. for W. J. Orr; architect, T. Callender; villa on Ballygomartin-rd., for G. A. Hill; architect, W. C. Porte; workshops in Loftus-st., for Clendinning & Swann, builders; shop on Oldpark-rd., for A. M. Dongan; architect, C. A. Aickin; 4 villas on Newtownards-rd. Upper, for H. Mills; architect, J. McGeagh; villa in Knocklofty-pk., for R. J. and T. Kerr; architect, T. R. Eagar; additions to P.E. school in Mill-av., Ligoniel, for the Belfast E.C.; architect, R. S. Wilshere; P.E. school in Fane-st. and Tate's-av., for the Belfast E.C.; architect, R. S. Wilshere; Parochial hall in Fortwilliam-av., for the Select Vestry of St. Peter's church; architect, A. W. Brown; shops and dwelling-house on Donegall-rd., for H. McLaurin; architect, W. C. Maxwell.—The Corporation has adopted a minute of the joint Law Improvement and Housing Committees recommending that tenders be invited for the completion of the streets on the Seaview site and the erection of 100 houses.

BLACKPOOL.—It has been resolved that the architect (Mr. E. D. Dennis) be instructed to erect houses in accordance with his lay-out on land purchased from Mr. W. Flint, on the Hoo Hill Housing Scheme.

BRACEBRIDGE.—Plans are being prepared for the erection of a new mental hospital.

BRADFORD.—The Corporation's education schemes comprise the erection of a boys' grammar-school at an estimated cost of £150,000, together with a secondary school on the Bolling Hall-estate, at an estimated cost of £76,000. The R.C. authoities propose to erect a new R.C. day school at Leeds-rd., for the Church of St. Peter, together with a new R.C. day-school at Bierley. The architects for the latter two schools are Messrs. Empsall, Clarkeson & Clarke, Bradford.

BRIGHTON.—The T.C. are to be asked to sanction the purchase for £2,000 of premises adjoining the Municipal Technical College for the extension of that institution.

BULKINGTON.—The following plans were submitted and passed by U.D.C.: Bungalow, Nuneaton-road, for A. Kyte; 2 houses in Coventry-road, for J. Hardy; cinema at Bicton, for Frank Voce, Nuneaton.

CATERHAM.—Plans for the erection of new buildings were received as follows by the Town Planning and Housing Committee of the U.D.C.: 2 pairs semi-detached dwelling houses, Hollidays Bottom, W. Butler; detached dwelling house, Court-road, C. G. Hollands; detached bungalow, Banstead-road, A. Crundell; conversion of 102 and 104, Chaldon-road (Alma-terrace) to 2 shops and dwelling houses, H. H. Dean.

CHERTSEY.—The Housing Committee has reported to the U.D.C. that Capt. Bellamy, agent for Mrs. Rickman, had written agreeing to the purchase price of £1,312 10s. for the 5¼ acres of land, for housing purposes, at Prairie-road and Green-lane, Addlestone, and also agreeing that vacant possession would be given on the completion of the purchase. The committee will further report to the Council.

DARTFORD.—Committee have approved of the undermentioned plans: Pair of houses, Watling-street, for W. E. Burke and J. H. W. Burke (subject to an order for combined drainage'; bottling store, Lowfield-street, for John Green & Co.; 2 houses, Stanham-road, for W. J. Brise (subject to an order for combined drainage); house, Firmin-road, for P. S. Avery (subject to an order for combined drainage); 2 houses, 65 and 67, Park-road, for Mrs. M. Phillips (subject to an order for combined drainage'; hall and institute, rear of 30-36, Lowfield-street, for the Parochial C.C. of the Parish Church of the Holy Trihity; bungalow, Green-street, Green-road, for E. J. Jones.

EALING.—Plans passed by T.C.: 6 houses in Tring-av., W., Daley & Co.; 11 in Niagara-av., W. Gardner; 4 in Gunnersbury-av., Newborn & Smith; 3 in Burnfield-rd., C. E. Bottle; 2 each in Argyle-rd. and Brutonway, by the Foundation Co.; one in Gunnersbury-av., by A. Lyford.

EASINGTON.—The R.D.C. is to make application to the M.H. for sanction to erect a further 50 houses.

EASTBOURNE.—In their report the Buildings Committee recommended the T.C. to approve the following plans of new buildings and extensions: Rowsell and Ticehurst, builder (architect, A. Ford); house and garage, junction of Dillinburgh and Upwick-roads; Weller and Seymour, builder (architect, C. Ford) 2 houses and garages, King's-avenue; I. S. Causton (builders, G. Bainbridge and Son), South Cliff-avenue, "Atherton," internal alterations; L. MacLachan (architect, P. D. Stonham; builders, J. Bodle, Ltd.) Cavalry-crescent, block of 3 dwelling houses; S. D. Foulkes, builder (architect, C. Ford), St. Philip's-avenue, 5 dwelling houses; R. Winsloe Patton (architect, F. G. Cooke), Vicarage-road, St. Anthony's School, sanitary block; Shell-Mex, Ltd. (builders, Shell-Mex, Ltd.), railway goods yard, Hampden Park, office; Newman and Andy (architect, P. D. Stonham), 6A, Grange-road, alterations forming stables.; A. Avard builder (architect, S. Box), Milton-crescent, pair of houses and garages; H. J. Lavender, builders (architect, W. R. Hamblyn), Milton-road, pair of houses; Eastbourne Corporation, No. 7, Victoria-drive housing site, 40 houses (the by-law as to inspection chambers to be complied with); Mostyn Hotel Co., Ltd. (architect, P. D. Stonham; builders, G. Bainbridge and Sons) King Edward's-parade, Mostyn Hotel, additions; Eastbourne College (architects, Tatchell and Wilson), Old Wish-road, Eastbourne College, new masters' and butlers' quarters; H. M. Simmons (architect; P. D. Stonham; builders, J. Bodle, Ltd.), Langney-road, 3 lock-up shops; J. J. Fillingham (architect, F. C. Benz; builders, Tanner and Sons), Park-avenue, detached house and garage).

EPSOM.—Plans for alterations and additions to Fairmile Hatch, for Sir G. Rowland Blades, M.P.; for a house and garage in Fairmile-lane, for Messrs. Osmans; for a house in Anyards-road, for E. G. W. Hounsom, and for a new cottage attached to Leigh Hill cottages, for Major Benton Fletcher, were formally approved at a meeting of Epsom R.D.C.—Plans for new buildings approved by R.D.C., included a shop store in Eversley-rd., leading to the District Council's housing estate on Surbiton- hill, and a number of new dwelling-houses and garages in various parts of the district.

GREENFORD.—The Ealing T.C. have passed plans for 22 houses west of Greenford-rd. and south of King's-av., for A. J. Perkins.

HORSFORTH.—The following plans were approved by U.D.C. unconditionally: House in West End-lane, for A. E. Allen; 54 houses, Cragg Hill housing Estate (Section 5), for U.D.C.; farm house in Broadgate-lane, for the Stanhope estate.—Subject to the signature of combined drainage agreement, the following were approved: House and workshop off Town-street, for J. W. S. Walker; 4 houses in Victoria crescent, for Read Bros.; 2 houses in Beech-avenue, for F. Furness; and 4 houses and garages in Victoria-mount for J. R. Micklethwaite.

HOVE.—The Corporation has approved the following plans: C. Scott, pair semi-detached houses, Davigdor-rd. (north side); Hunter & Bedford, for W. J. Keene, 2 pairs of semi-detached houses and garages, Berriedale-av. (west side); W. Willett, Ltd., house Princes-cres. (west side); W. Willett, Ltd., house, Princes-cres. (west side); Parsons & Cresswell, for Rev. Fawcett, conversion into flats, 24, Brunswick-terr.

IPSWICH.—Plans for the erection, at a cost of £6,000, of a new cemetery chapel, in which a crematorium will be incorporated, were approved at the annual meeting of the Ipswich Burial Board. Mr. J. A. Sherman is the architect.

LAMPETER.—Plans of new houses for T. M. Williams, Pensingrug, on the Bryn, and for Enoch Davies, Tyhen, at Pleasant-hill, were approved by R.D.C.

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LONDON (LAMBETH).—For a boy's club at Lambeth Parish Church £4,775 has been raised.

LUTON.—The Corporation has approved plans for the following: P. Widdocks, 2 houses and shops, Newark-rd.; Luton Gas Co., extension of ground floor offices, Dunstable-rd.; F. Willis, 4 houses (subsidy), Sherwood-rd.; A. G. Peck, 4 houses (subsidy), Wardown-cres.; N. Sale & Co., additions to factory, Rothesay-rd.; Miss E. Ruckwood, 2 houses (subsidy), Cutenhoe-rd.; C. C. Garrett, 4 houses (subsidy), 2 Cutenhoe-rd. & 2, Park-rd.; J. M. Murden, 3 houses (subsidy), Hillborough-rd.; Adey & White, alterations and additions, Lea Bridge Inn, Lea-rd.; A. Moore, 2 garages, Newark-rd.; M. Bryan, 1 house, Havelock-rise; H. Tennant, 2 houses, Marlborough-rd.; G. Day & Sons, 4 houses (subsidy), Talbot-rd.; J. R. Adkins, lock-up shop, Talbot-rd.; F. White, 2 houses (subsidy), Richmond-hill; F. Chandler & Son, 2 houses (subsidy), Marlborough-rd.; and W. Frost, 2 houses, Douglas-rd.

MANCHESTER.—Included in the plans approved by the Council are the following:—Billiards hall, Cheetham Hill-rd. and Queen's-rd., architects, Matley, Brotherton & Mills; W. H. Coupe, 20 houses, Arthur-st., Wildcroft-av. and Tyndall-av., Moston, architect, J. E. Kewell; Daily Express Co., additions to works, Luna-st., Ancoats, architects, J. H. Andrews & Butterworth; Hortrees Building Co., Ltd., revised block plan of 12 houses, Hilbre-rd. and Milwain-rd., Levenshulme, architects, Leech & Ratcliffe; J. Lane & Son, 109 houses, Buckingham-rd., Stamford-rd., Abbotsford-rd., Manley-rd., Byran-rd. and Westfield-rd, Chorlton-cum-Hardy, architects, George Westcott.—The M.T. has sanctioned the construction of a tramway between Middleton and Heywood, the cost of which is estimated at about £100,000.

NEWBURN.—The U.D.C. has obtained the sanction of the M.H. to erect 88 houses on the Westerhope estate.

NEWCASTLE-ON-TYNE.—The City Council has approved of a £134,000 scheme for new police, fire and court buildings in Pilgrim-st., and of a scheme for the provision of baths and washhouses at Scotswood, at a cost of £42,000. The City Property Surveyor has prepared a scheme for alterations to the Town Hall, to cost about £40,000.—The Estate and Property Committee of the Corporation has decided to put a proposal before the Council for alterations and office extensions at the Town Hall, at a cost of about £40,000.

OAKHAM.—A plan of 2 cottages to be built on the Ashwell-road, by W. L. Sargant, was approved of by U.D.C.

OXFORD.—The following plans were examined and approved by T.C.: A. T. Organ, 2 houses on the N.W. side of Glanville-road; F. J. Selwood, house on the west side of Abingdon-road; C. Wright, 3 houses off Charlbury-road; A. G. Smith, house on the S.W. corner of Hamilton-road and Banbury-road.

PETERBOROUGH.—T.C. have instructed the Engineer to prepare specifications, and to invite tenders for the erection of 50 non-parlour houses on the north-eastern portion of the land at Mayor's Walk recently purchased from the executors of W. D. Nichols. It was also decided to apply to the Ministry of Health for sanction to the allocation of a portion of the site of the West Town recreation ground as a housing site.

PLYMOUTH.—It has been resolved that the following plans be approved: J. H. Endean, 6 houses, Hillcrest-avenue; W. E. Jones, dwelling-house, 60, Lanhydrock-road; F. J. & A. Coad, 2 dwelling-houses, Faringdon-road; J. Blatchford & Son, 7 dwelling-houses, Queen's-road; W. H. Webb, dairy, rear of 31, Beaumont-street; J. H. Dyer, 6 dwelling-houses, Higher Venn estate; F. Kaphan, dwelling-house with shop, St. Levan-road; W. G. Perkins, 2 dwelling-houses with shops, Wolseley-road, Ford; Pearce Bros., 6 dwelling-houses, Glenarm-road; E. J. Nicholls, 2 dwelling-houses, Vanguard-terrace; H. Burrows, garage, rear of 72, Beaumont-road; W. T. Jinkin, shop front, 122, Alexandra-road, Lipson.

REIGATE.—On the recommendation of the Sanitary Committee of the T.C. plans were passed for a pair of houses in Crackell-rd., for Skilton & Whitmore; pair of houses on Plot 109 in Blackborough-rd, for C. Worley, subject to signing a drainage agreement; house in Wray-ln., for Mr. Hope; house at 5, Colley way, Clears estate, for C. E. Salmon; house in Blackborough-rd., for Oswald Bell, and house in Deeringsrd., for B. J. Roberts, subject to 6in. connections with public sewers.

SCARBOROUGH.—The erection of four more houses, for which sites have been found on the Edgehill Park estate, has been sanctioned by the Ministry of Health; 66 houses in course of erection at Edgehill-pk. are to be wired for electricity supply.

SHEFFIELD.—The Public Hall Committee has recommended to the City Council that the building of the Public Hall be proceeded with.

SHIREHAMPTON.—The Bristol C.C. has decided to erect 200 houses by direct labout at an estimated cost of £86,000.

SLOUGH AND DISTRICT.—Plans were approved by the Eton R.D.C. for the following: Farnham Royal—new factory building on the Slough Trading estate and house in Pitts-road, for Sir Squire Sprigge; Hitcham—house for A. E. Bunce; Denham—offices for Mrs. A. S. Adams and houses for F. S. Townsend and W. Wise; Burnham—house for Miss L. Allder and 9 houses at Cippenham, for L. Pusey; Langley—houses for A. T. Ricketts and B. Lee, and 2 houses for A. F. Instone; Stoke Poges—house for the Hon. Mrs. Satow, 9 houses for E. E. Knight; Horton—house for F. G. Avis; Taplow—Pavilion at the Dumb Bell Hotel, for R. Barham; Iver—house for W. E. Goodwin, alterations to The Tower Arms, for Burge and Co., house for Mrs. Martin; Gerrards Cross—House for A. and H. Scott.

TOTNES.—T.C. has approved plans for 12 additional houses.

WHITLEY.—Plans were approved by U.D.C. as follows: For alterations to the Plough Inn, Baxtergate; for an additional building at Sneaton Castle Priory; and by Mr. J. R. Hunter, for 3 pairs of houses in Marlborough-avenue.

*See also our List of Contracts, Competitions, etc.

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 5 6
Second Hard Stocks	3 19 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	2 14 3	Best Blue Pressed Staffs	9 5 0
Do. grooved for Plaster	2 16 3	Do. Bullnose	9 15 0
Do. Bullnose	3 8 3	Blue Wire Cuts	7 5 0
Best Stourbridge Fire Brick :—			
2½ in.	8 11 0	3 in.	10 3 0
GLAZED BRICKS—			
Best White Ivory, and Salt Glazed Stretchers	21 10 0	D'ble Str'tch'rs	30 0 0
		D'ble Headers	27 0 0
		One Side and two ends	31 0 0
Headers	21 0 0	Two sides and one End	32 0 0
Quoins, Bull-nose and 4½in.		Splays and Squints	28 10 0
Flats	28 0 0		

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.
Delivered London.

	s. d.		s. d.
2in. per yd. super	1 11	3in. per yd. super	2 9
2½in. „ „	2 4	4in. „ „	3 6

	s. d.	
Thames Ballast	10 6	per yd
Pit Sand	13 9	„ „
Thames Sand	14 6	„ „
Best Washed Sand	14 6	„ „
¾in. Shingle for Ferro-Concrete	12 9	„ „
¾in.	14 0	„ „
¾in. Broken Brick	11 6	„ „
Pan Preeze	7 6	„ „

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test £2 18 0 to	£3 3 6
51s. alongside at Vauxhall in 80-ton lots.	
Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
„ „ Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
„ „ White	3 12 6
„ Fine	5 12 0
Sirapite, Coarse	3 9 0
„ Finish	3 17 0
Grey Stone Lime	3 0 9
Chalk Lime	3 0 9
Best Ground Blue Lias Lime	2 13 6
Hair per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4½
Do. do. delivered on road wagons at above stations, per ft. cube	4 5½
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
HOPTON-WOOD STONE—	s. d.
Delivered at any Goods Station, London.	
Random blocks from 10ft. and over P. ft. cb.	17 0
Sawn two sides „	27 0
Sawn three or four sides „	32 0
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station, London.	
6in. sawn two sides landings to sizes (under 30ft. super) Per ft. super	5 6
6in. rubbed two sides, ditto „	6 0
3in. sawn two sides slabs (random sizes) „	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) „	1 6½
1½ in. to 2 in. ditto, ditto „	1 4
HARD YORK—	
Delivered at any Goods Station, London.	
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5 1½
6in. rubbed two sides, ditto „	6 1½
4 in. sawn two sides slabs (random sizes) „	2 10
3 in. ditto ditto „	2 1½
2 in. self-faced random flags ... Per yd. super	9 0

CAST STONE.

Delivered in London Area in full van loads, per ft. cube :—Plain, 8s. 6d. ; Moulded, 9s. 6d. Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£28 0	3 × 6	£21 0
4 × 9	25 0	3 × 11	25 0
4 × 8	24 0	2 × 11	25 0
4 × 7	23 0	3 × 9	24 0
3 × 8	21 0	2½ × 9	23 0
3 × 7	20 0	3 × 4½	22 0
2½ × 7	20 0	3 × 4	22 0

PLANED BOARDS.

1 × 11	£27 0 — 1 × 9 £26 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
¾	20/-	1¼	31/-
¼	22/-	1½	34/-
1	25/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.	Inches.	per sq.
1	25/-	¾	16/6
1¼	31/-	¾	19/-
1½	34/-	1	24/-

MATCHING (BEST).

BATTENS.

Inches.	s. d.
⅞ × 2	2 6 per 100 ft.

SAWN LATHS.

	s. d.
Per bundle	0 2 4

1" AND UP THICK.

	£ s. d.	£ s. d.
Dry Austrian Wainscoat, per ft. cube	0 16 0 to	0 18 0
Dry American and /or Japanese Figured Oak, ft. cube	0 15 0 to	—
Dry American and /or Japanese Plain Oak, ft. cube	0 11 0 to	0 13 0
Dry sq. edged Honduras Mahogany, ft. cube	0 16 0 to	0 18 0
Dry Log cut Honduras Mahogany, ft. cube	0 18 0 to	1 1 0
Dry Cuba Mahogany, ft. cube	1 4 0 to	1 10 0
Dry Teak, ft. cube	0 13 0 to	0 15 0
Dry American Whitewood, ft. cube	0 11 0 to	0 14 0
Best Scotch glue, per cwt.	4 10 0 to	—
Liquid Glue, per cwt.	4 7 0 to	5 10 0

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£ s. d.		£ s. d.
24 by 12	32 18 4	18 by 10	18 12 11
22 by 12	29 17 11	18 by 9	16 9 2
22 by 11	27 14 2	16 by 10	15 12 6
20 by 12	26 5 0	16 by 8	12 3 9
20 by 10	22 10 0		

TILES.

Delivered at London rate stations in full truckloads of not less than 4 tons. Per 1,000 f.o.r. London.

		£ s. d.
Best machine-made tiles from Broseley or Staffordshire district		5 12 6
ditto hand-made ditto		5 17 6
Ornamental ditto		6 2 6
Hip and valley tiles (per dozen)	Hand-made	0 9 6
	Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
„ „ Stanchions	16 10 0
In Roof Work	19 10 0

MILD STEEL ROUNDS.
To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅝in. to ¼ in.	10 15 0
⅛ in.	11 0 0	⅛in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes.	Fittings Over ½"	Flanges Over ½"
Black Gas	67½%	45%	55%
Galvanised Gas	52½%	35%	45%
Blue Water	62½%	40%	50%
Galvanised Water	46½%	30%	40%
Red Steam	57½%	35%	45%
Galvanised Steam	40 %	25%	35%

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.

O.G. GUTTERS.

3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

RAIN-WATER PIPES, &c.

per yd. in 6 fts.	Pipe.	Bends, angles.	stock Branches. stock angles
2 in. plain	1/10½	1/3	1/9½
2½ in. „	2/0½	1/4½	2/1½
3 in. „	2/6	1/9	2/7½
3½ in. „	2/11½	2/0½	3/0½
4 in. „	3/5	2/6½	3/8½

L.C.C. COATED SOIL PIPES—London Prices, ex Works.

	Pipe.	Bends, angles.	stock Branches. stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. „	3 9	2 7½	3 7
3 in. „	4 6	2 10	4 2½
3½ in. „	4 11½	3 7	4 11½
4 in. „	5 5½	4 0½	5 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works.

	Pipe.	Bends, angles.	stock Branches, stock angles
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1	8 0½
4 in. „ „	6 2	5 8	10 0
5 in. „ „	7 2	10 10	17 1
6 in. „ „	8 6	13 2	21 9

Gasken for jointing, 38/6 per cwt.

	Per ton in London. £ s. d.	£ s. d.
IRON—		
Common bars	13 0 0 to	14 10 0
Staffordshire Crown Bars— good merchant quality	14 5 0 to	15 5 0
Staffordshire Marked Bars	16 5 0 ...	17 5 0
Mild Steel Bars	10 0 0 ...	11 0 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0 ...	11 0 0
Hoop iron, basis price	12 0 0 ...	13 0 0
„ Galvanised	27 0 0 ...	28 0 0
Soft Steel Sheets, Black—		
Ordinary sizes to 20 g.	13 5 0 ...	14 5 0
„ „ „ 24 g.	14 5 0 ...	15 5 0
„ „ „ 26 g.	16 5 0 ...	17 5 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20g.	15 10 0 ...	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16 10 0 ...	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18 10 0 ...	20 10 0
No. 1 quality £4 per ton extra.		
Flat and Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 0 0 ...	19 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 10 0 ...	19 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	21 10 0 ...	22 10 0
Sheets Galvanised Flat, Best quality—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0 ...	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0 ...	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0 ...	26 10 0
Cut Nails, 3 in. to 6 in.	19 0 0	
(Under 3 in. usual trade extras.)		

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet, English, 4 lb. and up	33 10 0
Pipe in coils	34 0 0
Soil Pipe	37 0 0
Compo Pipe	38 0 0
NOTE—Country delivery, 20s. per ton extra ; lots under 3 cwt., 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra	
Oil lead, ex London area, at Mills per ton	24 10 0

COPPER.

	s d.
Seamless Copper tubes (basis) per lb.	1 0½
Strong sheet „	1 0
Thin „	1 0¼
Copper nails „	2 3
Copper wire „	2 4

PLUMBERS' BRASS WORK.
Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
29/-	45/-	76/-	153/-	246/-	510/-	per doz

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
41/6	62/-	92/-	174/-	300/-	588/-	per doz

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.	
39/6	60/-	116/6	per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.	
7/6	10/-	14/-	23/-	30/-	42/-	per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
7/6	11/-	17/-	29/-	36/-	63/-	per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.	
10/-	12/-	20/-	24/-	31/-	per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S·F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	
35/-	56/-	98/-	162/-	228/-	per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.	
8 lbs. P. traps	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/-	„

TIN—English Ingots, 3/1 per lb. SOLDER—Plumber's 1/4, Tinmen's 1/7, Blowpipe 1/7 per lb.

PAINTS, &c.

Raw Linseed Oil, in pipes	per gallon	0	2 11
„ „ „ in barrels	„	0	3 1
„ „ „ in drums	„	0	3 3
Boiled „ „ in barrels	„	0	3 3
„ „ „ in drums	„	0	3 6
Turpentine in barrels	„	0	4 0
„ in drums (10 gall.)	„	0	4 0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		48	0 2
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J." Brand and other best brands (in 14lb. tins) not less than 5 cwt. lots per ton delivered		67	10 0
Red Lead, Dry (packages extra) ... per ton		39	10 0
Best Linseed Oil Putty per cwt.		0	15 0
Filicol „		0	15 6
Size. XD quality fkn.		0	3 6

Continued on next page.

*The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd*).

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths.....	2¾d.	32 oz. fourths.....	6½d.
15 „ thirds	3½d.	32 „ thirds	9½d.
21 „ fourths.....	4d.	Obscured Sheet,15 oz.	3½d.
21 „ thirds	4½d.	„ „ 21 „	4½d.
26 „ fourths.....	4½d.	Fluted 15 oz. 6½d.,21 oz. 9d	
26 „ thirds	6½d.	En'lled 15 oz. 4½d., 21oz.6½d	

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
3/16 Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	6d..
Ditto, tinted	8½d.
Rolled Sheet	5½d.
White Rolled Cathedral	5½d.
Tinted Do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon. £	s.	d
Oak Varnish.....	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish.....	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black.....		0	7	6
Berlin Black.....		0	14	6
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine.....		0	9	0
Cuirass Black Enamel		0	7	0

TRADE NEWS

St. John's Church, Rochdale.

We learn that with regard to the Church of St. John, Rochdale, illustrated in our issue for April 29, the reinforced concrete and "Empire" stone dressings were the work of the Empire Stone Company, Ltd., of Thanet House, 231, Strand, W.C.2.

"The Autocar."

The current issue of *The Autocar* is a much enlarged special number devoted mainly to the needs and interests of newcomers to motoring. The special features in this "New Motorists' Number" deal in a practical, yet at the same time, entertaining, way with the many things that the new owner of a car wishes to know, and ought to know, while an achitect contributes some valuable hints regarding the construction of inexpensive garages suitable for the usually limited space available with suburban or small country or town houses.

The Carlton Theatre.

We understand that the stone carving to the front elevation of the Carlton Theatre, illustrated in our issue of April 29, was executed by Messrs. E. J. and A. T. Bradford, Sculptors and Craftsmen, of 62A, Borough-road, S.E.1.

Travelling Exhibit of Radiators.

The travelling exhibit of the National Radiator Co., Ltd., Hull, of radiators and "Ideal" boilers, will visit and give demonstrations at the following points in the Leeds district:—Friday and Saturday, May 20 and 21, Mr. Henry R. Lax's ground, Nunroyd-avenue, near Street-lane, Chapeltown; Monday, May 23, open space at bottom of Easterly-road, Harehills, Roundhay-road; Tuesday, May 24, open space, West-park, Far Headingley; Wednesday, May 25, Leeds Corporation Motor Park, bottom of Cookridge-street.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND

Aberdeen.—It has been decided to build a church hall at St. Clement's Parish Church at an estimated cost of £3,600.

Arbroath.—Extensive repairs are to be carried out by T.C. on the Corporation water works at Glenogil, following damage caused by recent storm.

Bishopbriggs. — Houses. — The Housing Committee of the County of Lanark, Lower Ward, have commenced extending their housing scheme at Springfield, Bishopbriggs. At present they are erecting five blocks of tenements, with six houses to each block. The buildings are of brick, and are to be roughcast with cement.

Brechin.—The Town Council has agreed to erect another two blocks of houses of four rooms each on Cookston-road.

Edinburgh.—Edinburgh Dean of Guild Court has granted a warrant to Moss Empires (Limited) to proceed with the reconstruction of the Edinburgh Empire Theatre. The cost of the reconstruction is estimated at upwards of £50,000, and the principal alteration will be an increase in the seating accommodation to make the auditorium hold 2,000 people. Other petitions granted included C. H. Dunlop—Four double bungalows at Stevenson-road. John Hope's Trustees—Workshop and garages at Annandale Street-lane. James Miller (Interim Warrant)—Two double houses at corner of Queensferry-road and West Barnton-terrace. James Robb—Nine garages at Trinity-grove. Danish Bacon and Co-operative Trading Co., Ltd.—Warehouse and garage at 201, Leith-walk. Thomas Paris and another—Double villa at Craigleith-road.

Fraserburgh.—Gas Works.—The T.C. at a special meeting considered the proposals of the Gas Committee for the erection of new works. The committee decided to recommend the Council to erect new works, at cost of £20,000, with up-to-date plant, on the site at Mid-street belonging to them.

Glasgow.—The U.F. Church Presbytery are to purchase a site for a church in Beaconsfield-road, close to the large housing scheme at Kelvindale.

Kilsyth.—Houses.—The Central District Committee of Stirling County Council has resolved to proceed immediately with a scheme for the erection of 40 houses in the Kilsyth area on the understanding that 10 would be built as subsidy houses by William Baird & Co. (Ltd.), coalmasters.

Montrose.—Bridge.—A joint conference of the Montrose T.C. and Forfar C.R.B. unanimously resolved that the new bridge over the river South Esk at Montrose, to supersede the present suspension bridge, be constructed of ferro-concrete, to the design of Sir Owen Williams, engineer, London. The cost is estimated at £73,450.

Scottish Electricity Scheme.

Details are published of the scheme prepared for the Central Scotland Electricity area. The scheme, which is issued by the Central Electricity Board, provides for eight capital stations for the production of power for the central industrial area of Scotland, to take the place of the 36 stations generating electricity in the area at present. The various stations are to be inter-connected by a series of high-pressure main transmission lines. The scheme also provides for transforming stations and other equipment. The standardisation of frequency is an important additional element in the scheme. The capital expenditure in connection with the scheme, it is estimated, will amount by the end of the financial year 1933-34 to £5,975,000. The selected stations are:—Clydes Mill (Clyde Valley Electrical Power Co.), Dalmarnock (Glasgow Corporation), Falls of Clyde (two hydro-electric stations—Lanarkshire Hydro-Electric Power Co.), Portobello (Edinburgh Corporation), Yoker (Clyde Valley Electrical Power Co.), and also Bonnybridge (Scottish Central Electric Power Co.), Carolina Port (Dundee Corporation), Dunfermline (Fife Electric Power Co.), and Kilmarnock (Ayrshire Electricity Board).

BUILDING TRADE WAGES IN SCOTLAND.*

The following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers. +	Carpenters, Joiners.	Plasterers.	Slaters.	bers.	Painters.	Labourers—Masons', Bricklayers', Plasterers'.
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	10½d. to 1/1
Airdrie.....	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½
Arbroath.....	1/7	1/7	1/7	1/7½	1/7	1/7	1/5½	1/1½
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3
Bathgate.....	1/8	1/8	1/8	1/8½	1/8	1/8	1/6½	1/2 to 1/3
Blairgowrie.....	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Coatbridge	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3 to 1/3½
Dumbarton.....	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dumfries.....	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Dunfermline	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Greenock.....	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/0½ to 1/3½
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Hawick	1/7	1/7	1/7	1/7-1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kilmarnock	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkcaldy	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/0 to 1/1
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Motherwell	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3
Stirling	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Stirlingshire ..... (Eastern District)	1/8-1/10	1/8-1/10	1/8	1/9	1/7	1/8	1/6½	1/3½
Wishaw	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 829.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft deep	per yard cube	11	0
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	,, ,,	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	,, ,,	7	0
Add if in floors 6 in. thick	,, ,,	3	3
Add if in beams	,, ,,	3	9
Add if aggregate 1 : 2 : 4	,, ,,	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,, ,,	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	,,	7	10	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	,, ,,	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

		s.	d.
Fair external in half brick rings	,, ,,	0	0	10
Axed in stocks	,, ,,	0	1	9
Rubbed and gauged jointed in putty camber or segmental	,, ,,	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	,, ,,	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	,,	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,, ,,	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Portland stone fixed	,, ,,	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	,,	80	9
Do. 24 in. × 12 in. Do. Do.	,,	90	0

CARPENTER AND JOINER

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	,, ,,	5	6
Do. roofs, floors and partitions	,, ,,	6	0
Do. trusses	,, ,,	8	6

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	,,	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	,,	1	6
Gutter boards and bearers	,,	1	0

FLOORING.

		¾″	1″	1¾″	1½″
Deal-edges shot	per sq.	—	44/6	53/-	60/6
Do. tongued and grooved	,,	—	49/-	57/6	65/-
Do. matchings	,,	45/-	51/-	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights ; average size	,, ,,	3	9

DOORS.

		1½″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	,,	2/5	2/8	2/11
Two-panel moulded both sides	,,	2/8	2/11	3/2
Four-panel Do. Do.	,,	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	,,	1/4	1/6	1/9
Add if cross-tongued	,,	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	,,	19	0
Do. stanchions	,,	21	9
In roof work	,,	27	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft run	1/6	1/9	2/-	2/6
Ogee Do. Do.	,,	1/9	2/-	2/6	3/3
Rain-water pipes with ears	,,	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	,,	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	,,	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	48	6
Do. Do. in flats	,,	47	6
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	,, ,,	1	6
Copper nailing	,, ,,	0	6

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	,,	1/8	2/2	2/7	3/10	—	—
Do. soil	,,	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	,,	1/2	1/8	2/1	2/10	3/6	—
Red lead joints	,,	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	,,	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	,,	—	—	—	14/7	19/6	—
Bib cocks and joints	,,	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	,,	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	6
Do. Do. Sirapite	,, ,,	2	9
Do. Do. Keen's	,, ,,	4	0
Add saw lathing	,, ,,	1	7
Add metal lathing	,, ,,	2	6
(Not including hangers or runners, &c., for suspended ceilings.)			
Portland cement screed	,, ,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	,, ,,	1	0
Obscured sheet	,, ,,	1	1
⅛-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10½
¼-in. wired cast plate	,, ,,	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1¼ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Monday evening.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

ALLOA.—(*a*) Retaining wall and (*b*) shelter at Sunnyside Cemetery, for the P.C. Messrs. T. Frame & Sons, 2, Mill-street.

Builders—
*(*a*) John Thomson & Son, Alloa.
Engineers—
*R. Mercer & Co., Alloa.
Builders—
*(*b*) John Thomson & Son, Alloa.
Joiners—
*W. Macmillan & Son, Alloa.
Plumber—
*James Young, Alloa.
Tiler—
*John Davie, Alloa.
Painters—
*H. & R. Arnott, Alloa.

ALPERTON.—New buildings at Alperton, for Messrs. Pantone Processes, Ltd. Mr. F. Lindus Forge, F.R.I.B.A., 3, Crooked-lane, E.C.4 :—

Holland & Hannen and Cubbits, Ltd.	£87,773
James Carmichael, Ltd.	85,848
Ashby & Horner	85,601
T. Rider & Sons	84,439
F. & H. F. Higgs, Ltd.	84,297
*Dove Bros., Ltd.	81,795

BASFORD.—Secondary school on Highbury-road site, for Notts C.C. :—
*H. James, Mansfield £43,897

BELFAST.—Electric light installation at Ormeau Park Public Elementary School, for E.C. Mr. R. S. Wilshere, A.R.I.B.A., P.A.S.I., Education Architect, Victoria-street :—
*Colmore Electric Light Works, Belfast, £350

BINGLEY.—Pressure pump house, for the Bradford Corporation Waterworks Department :—
*Edge & Pace £2,639 0 11

BOOTLE.—Public convenience on east side of Hawthorne-road, for T.C. :—
V. & A. Gale £226

BOOTLE.—Bricks—20,000, for T.C. :—
Burscough Brick & Tile, Co., Ltd. £74

BRAY.—81 new houses, for U.D.C. :—
*M'Laughlin & Harvey, Ltd., Dublin £34,244.

BRADFORD.—Printing works at Longside-lane, for W. N. Sharpe, Ltd. :—
*Jeptha Thornton & Son.

BRISTOL.—(*a*) 8 houses at Bedminster Down; (*b*) 2 houses at Knowle, for the Corporation :—
(*a*) E. Walters & Son £3,562
(*b*) A. W. Norris 1,040

BROMLEY (KENT).—40 houses on the T.C. housing estate at Bromley Common :—

H. R. Fenn	£25,022	18	0
W. H. Willson & Co.	23,458	0	0
Pondac, Ltd.	23,372	12	0
J. Elliman & Son, Ltd.	22,944	0	0
Perry's (Ealing), Ltd.	22,130	0	0
R. Mansell	21,860	0	0
J. W. Ellingham, Ltd.	21,121	0	0
J. B. Edwards & Co.	20,553	0	0
Franklin & Co.	18,540	0	0
*Harry Neal, Ltd.	18,318	0	0
W. J. Langbridge & Co., Ltd.	18,147	9	0

BROMLEY (KENT).—28 flats on Turpington estate, for T.C. :—
*J. Elliman & Son, Ltd. £13,720

BUNDORAN.—Painting exterior of Great Northern Hotel, for Great Northern Railways; Mr. F. C. Wallace, secretary, Amiens-street Station, Dublin.
*Moses Bullick & Sons, Belfast.

BURNLEY.—Structural steelwork in workshops and stairs, at Old Hall, for C.B. :—
*Jos. Webb & Sons, Bury £1,148 4 0

BURTON-ON-TRENT.—Heathcote-road sub-station, for C.B. :—
*George Hodges & Son, Burton-on-Trent £370

BURTON-ON-TRENT.—Extension of switch house for C.B. Electrical Engineer :—
Arthur Holmes & Sons, Ltd., Burton-on-Trent £967 13 6

CARDIFF.—Twelve parlour houses at Cardiff-road, Dinas Powis, for R.D.C. Mr. Monod T. Seymour, architect, "Monolu," Beulah-road, Rhiwbina, near Cardiff.

Copp Bros., Barry	£8,140	0	0
James & Woodworth, Cardiff	6,000	0	0
Alban Richards & Son, Cardiff	5,900	0	0
D. Davies & Son., Ltd, Cardiff	5,880	0	0
Owen & Davies, Ltd., Creigiau	5,760	0	0
A. E. Hamilton, Caerphilly ...	5,700	0	0
F. R. Absalom, Ltd., Penarth	5,670	0	0
Newman & Co., Cardiff ...	5,649	0	0
Austin Davies, Dinas Powis...	5,616	0	0
John Harry & Son, Radyr ...	5,611	0	0
William Rowles, Cardiff ...	5,600	0	0
Rhys J. Rees & Co., Ltd., Treforest	5,569	0	0
*Newcombe & Co. (Cardiff), Ltd., Cardiff	5,520	0	0
E. O. James & Co., Cardiff ... (Withdrawn).	5,275	0	0

CAYNHAM.—Restoration of Caynham Church, Messrs. Nicholson & Clarke, architects, King-street. Hereford.
*W. Bowers & Co., Hereford.

CHIPPING SUDBURY.—12 houses on Wickwar housing site :
*Keynton & Sons, Wootton-under-Edge £5,400

COSELEY.—30 non-parlour houses on Upper Ettingshall-road, for U.D.C. Mr. G. E. Mitchell, Surveyor :—

A. J. Crump & Sons, Ltd., Dudley	£16,255
J. & H. Morgan, Birmingham	13,950
Worton & Blackham, Sedgley	13,880
W. Willetts & Son, Ltd., Kingswinford	13,860
Eadie Towers & Co., Wolverhampton	13,770
Arthur Powell, Wolverhampton ..	13,500
A. E. Greensil, Coseley	13,445
Joseph Webb, Coseley	13,400
H. T. Marchant & Co., Bilston ..	12,915
*A. M. Griffiths, Wolverhampton	12,665

CROYDON.—Two-story sub-station at Lower Coombe-street for the B.C. :—
‡G. Poulton & Sons £1,523 12 0

CROYDON.—Waddon Park-avenue sub-station, for C.B. :—

Smith & Sons, Junction Works, S.E.25	£237	0	0
Maides Bros., Croydon	225	0	0
E. J. Saunders, Croydon	212	10	0
Truett & Steel, Ltd., Thornton Heath	200	0	0
Grace & Marsh, Ltd., Purley Way	188	0	0
*E. H. Smith, Croydon	183	0	0

CROYDON.—Switchroom flooring, for C.B. :—

E. H. Smith, Croydon	£415
Maides Bros., Croydon	415
E. J. Saunders, Croydon	399
*Truett & Steel, Ltd., Thornton Heath	375

CROYDON.—Artesian well, for C.B. :—

F. Smith & Son, Grimsby	£1,390	0	0
A. C. Potter & Co., Grantham	1,201	10	0
J. J. Croucher, Nottingham ..	1,185	0	0
W. Matthews & Co., Westminster	1,171	2	0
C. Isler & Co., Ltd., Southwark-street	1,150	0	0
*Le Grand Sutcliffe & Gell, Ltd., Southall	1,107	17	9

CUDWORTH (S. YORKS.).—Cinema for the Cudworth Theatres, Ltd. :—
*Thos. Wade & Sons.

DARFIELD (S. YORKS.).—School for the Education Department of the W.R.C.C.; Mr. Wormald, architect :—
*E. Brown & Son.

DEWSBURY.—Structural work for new infirmary at Moorlands, for Infirmary Board. Mr. T. L. Sharpe, architect.
*T. Horsfall & Co., Liverpool. ... £61,493

DOLGELLEY.—500 lin. yds. 9 in, stoneware pipe sewer, 1,500 lin. yds. 6 in. stoneware pipe sewer, 150 lin. yds. 6 in. iron pipe sewer, 600 lin. yds. 6 in. iron pipe sewer, 500 lin. yds. 9 in. iron outfall sewer, together with manholes, flushing tanks, ventilating columns, also storage tanks, engine house, pump well and all other appurtenant works, at Fairbourne, for R.D.C. Mr. F. J. Rodwell, Engineer, 37 and 38, Prudential Assurance Buildings, Park row, Leeds :—
*P. Charnock, Collingham, near Leeds £5,203 11 0

DUBLIN.—Alterations to 39, Grafton-street, as showrooms, for Electricity Department :—

P. F. Fearon & Co.	£4,775	0	0
J. Daly	3,150	0	0
C. Jones & Sons, Ltd.	2,999	0	0
J. F. Keatinge & Sons, Ltd. ...	2,820	0	0
P. J. Watchorn	2,722	0	0
A Panton Watkinson	2,599	13	4
*J. Dowling & Co.	2,200	0	0

DUBLIN.—Additions and repairs to Mansion House for Borough Commissioners :—

J. Pemberton & Sons	£13,050	0	0
P. F. Fearon & Co.	12,074	16	7
J. Dowling & Co.	12,000	0	0
J. Beckett, Ltd.	11,799	0	0
C. Jones & Sons, Ltd.	11,794	17	6
A. P. Watkinson	11,250	0	0
M. O'Callaghan & Co., Ltd. ..	10,566	9	10
J. F. Keatinge & Sons, Ltd. ..	10,400	0	0
*E. Power	8,600	0	0

(All of Dublin.)

DUNDEE.—Supply and laying of jointless flooring, for the T.C. Mr. D. H. Bishop, Head Office, Electric Supply Dept., Dudhope-crescent-road :—
*A. & W. Ingram, Dundee.

DUNGANNON.—14 houses for U.D.C. :—
*J. Boyd, Dundonald £4,769 8 0

DURRINGTON.—Wiring installation of 30 houses, for Electric Light Co., Ltd. Mr. S. N. Bigwood, secretary, Midland Bank-chambers, Salisbury :—
*Stanley Cooper & Co., Ltd., Bournemouth.

EARL'S BARTON.—16 houses for R.D.C.
‡W. Thompson & Sons, Ltd., Irthlingborough £7,832

EAST DEREHAM.—Three pairs of cottages in Crown-road, for U.D.C. Mr. W. Astley Norris, Surveyor.

Taylor & Son, East Dereham	£3,156	0	0
A. Johnson, East Dereham	3,030	0	0
*H. Mack's Exors., East Dereham	2,985	0	0
H. C. Tofts, Hingham ...	2,970	0	0

FAREHAM.—28 houses non-parlour type at Fleet End and Osborne-road, Warsash, for the R.D.C. Mr. W. Hunt, 97, West-street :—
18 *houses, Fleet End—*
*Geo. Mitchell, Titchfield £7,680
10 *houses Osborne-road, Warsash—*
*C. W. Hully, Fareham 4,250

GLASGOW.—Painter work on the Govan Town Hall, for Corporation.
*J. & R. Anderson, Glasgow £363 5 2

GLASGOW.—1,000 houses on various sites, for the Corporation, at the following prices :—

Type C.3.—Three-apartment flatted houses	£405
Type N.3.—Three-apartment flatted houses	407
Type N. 4.—Four-apartment flatted houses	430
Type D. 3.—Four-apartment flatted houses	464
Type E. 4.—Three-apartment semi-detached cottage	432
Type F. 3.—Four-apartment semi-detached cottage	478

*McDonald (Contractors), Ltd.
(Subject to certain conditions.)

GLASGOW.—1,000 houses on various sites, for the Corporation, at the following prices :—

	Brick Roughcast.	Terrazzo.
Type C.3.—Three-apartment flatted houses ...	£400	£409
Type N. 4.—Four-apartment flatted houses ...	430	440
Type E. 4.—Three-apartment semi-detached cottage	—	445
Type F. 3.—Four-apartment semi-detached cottage	—	495

*Balshagray Building Company.
(Subject to certain conditions.)

GLASGOW.—500 houses on various sites, for the Corporation, at the following prices :—
C. 3 type, £398; D. 3. type, £463.
*Cowieson's, Ltd.
(Subject to certain conditions.)

GLASGOW.—Glazing work of 330 tenement houses to be erected at Possil, for the Corporation.
*Jas. P. M'Phie £997 3 8

GLASGOW.—Painting work at Bellefield sanatorium, for Corporation City Engineer :—
‡P. M'Kerracher & Sons, Ltd., Glasgow £1,082 1 5½

GLASGOW.—Fireclay bricks for Dalmarnock gasworks, for Corporation :—
‡Castelcary Fireclay Co., Ltd. ..£421 1 5

GRAVESEND.—Addition to electricity sub-station at 37, Queen-street, for T.C. Mr. J. G. Bennett, L.R.I.B.A., architect, 5, Woodville-terrace :—
*Burvill & Steene, Gravesend £632

GRAVESEND.—Erection of 114 houses, for the Corporation. Mr. J. G. Bennett, L.R.I.B.A., 5, Woodville-terrace, Gravesend.
†J. Clements, Northfleet £48,470

GRAVESEND.—114 houses on housing scheme No. 3, for T.C. Borough Architect :—
‡Jesse Clements, Northfleet £48,470

HAILSHAM.—20 houses on Mill-lane site, for R.D.C. Building Surveyor :—
‡G. Gower & Sons £9,000

HAMILTON.—Houses at Low Waters, Newfield Farmhouse, the Yews, for T.C. Mr. P. M. Kirkpatrick, Town Clerk.
Excavator, brick, etc.—
*E. Morgan & Co., Hamilton.
Carpenter and joiner—
*W. Chambers & Sons, Ltd., Motherwell.
Glazier—
*J. B. Boyd, Burnbank.
Slater and Roughcast—
*Wilson & Hendry, Hamilton.
Plaster—
*Wilson & Hendry, Hamilton.
Plumber—
*T. Coats, Motherwell.
Painter—
*J. Kemp & Son, Motherwell.
Electrical work—
*Grindlay, Ross & Co., Ltd., Glasgow.

HENLEY.—Four almshouses in Vicarage-road, for Burgis Trust. Mr. F. C. Wren, Architect, Town Hall :—

Francis Bros., Tilehurst	£2,409
Malden & Sons, Henley	2,050
Butler Bros., Henley	1,973
*E. Clark, Henley	1,717

HOVE.—Erection of a greenhouse and other works at the cemetery, for T.C. :—
*McKellar & Westerman, Hove £246

HULL.—Installation of electric light, Park-avenue special school, for E.C.
†Alexander Shaw & Sons ... £375 15 0

HULL.—Renewal of the Newland-avenue track, for Corporation.

G. Curtis	£6,756	16	3
*Sangwin, Ltd.	5,598	0	0

KEITH, N.B.—Houses in Balloch-road and Regent street, for the T.C.

Balloch-road.

Masons—
•C. Webster & Son.
Joiner—
•A Cuthbert.
Slater—
•S. Fraser.
Plumber—
•James Annand.
Plasterers—
•George Hume and Sons.
Painter
•John Symon.
All of Keith.

Regent-street.

Masons—
•C. Webster & Son.
Joiner—
•R. M'Gregor.
Slaters—
•C. Dickie & Son, Huntly.
Plumbers—
•A Joss & Son.
Plasterers—
•George Hume & Son.
Painter—
•John Symon.

LEEDS.—Pavilions and conveniences at (*a*) Meanwood Recreation ground; (*b*) Stanningley Recreation ground; and (*c*) rebuilding of garages and stables at Roundhay Park, for T.C. Mr. W. T. Lancashire, City Engineer :—

• (*a*) Lazenby Bros., Leeds	£610 6 0
• (*b*) Lazenby Bros., Leeds	406 4 0
• (*c*) S. Flockton, Leeds	1,837 13 9

LEEDS.—118 houses for Corporation, (*a*) 68 on the Meanwood estate, and (*b*) 50 on the York and Selby-road estate. Mr. W. T. Lancashire, City Engineer, Municipal Buildings :—

•(*a*) W. Ripley & Sons, Ltd., Leeds.....	£32,028 0 0
•(*b*) A. Braithwaite & Co., Ltd., Leeds.....	24,032 18 8

LEEDS.—(*a*) At York-road estate, 32 A.3 houses and 22 B.3. houses; (*b*) at Meanwood estate, 68 B.3 houses, for Corporation.

(*a*) •A. Braithwaite & Co.,Ltd.	£24,032 18 8
(*b*) •W. Ripley & Sons, Ltd. ...	32,028 0 0

LIVERPOOL.—Alterations and additions to Caldie High School, for Corporation.

•J. A. Milestons & Son, Ltd.	£9,360 0 0
R. H. Green	9,063 10 0

(Originally accepted.)

LONDON (Kensington).—Convenience for women westwards of the Central Library in Kensington High-street, for B.C.

‡Lane Bros. £238 10 0

LONGFORD, IRELAND.—Conversion of Kelleher Barracks into dwelling houses, for U.D.C.

•P. Kelly & Son, Earl-street £2,950 0 0

MACCLESFIELD.—Offices in Castle-street, for Cheshire Building Society. Mr. Fredk. C. Sheldon, architect, 7A, King Edward-street :—

•Cooper Bros., Macclesfield.

MAIDSTONE.—Sewerage, 650 yds. of 6 in. stoneware pipe sewer, with manholes, inspection chambers, &c., and the construction of engine house, ejector chamber, settling tanks, filter bed, and other appurtenant works, at Staplehurst, for R.D.C. Mr. T. A. Busbridge, Engineer and Surveyor.

W. T. Sharp, Dover ...	£2,062 11 2½
Mears Bros., Lewisham ...	1,962 0 2
W. & C. French, Essex ...	1,947 19 6
Redriff Public Works, London	1,885 0 0
Sir W. Prescott & Son,London	1,707 0 0
•W. T. Burrows & Son, Maidstone	1,459 10 6

MANCHESTER.—Two shops and houses, for John Buckley, Timperley, at Leicester-road and Ashborne-grove, Broughton. Mr. A. V. Roberts, 113, Great Cheetham-street, West Broughton :—

•J. E. Armstrong & Co., Ltd., Manchester.

MANCHESTER.—Alterations and electric light installation to premises at 22, Market-street, Manchester, for Price's (Tailors), Ltd., 55, Vicar-lane, Leeds :—

Alterations.
•B. & W. Smith, Grimsby.
Electric light.
•Baker & Hyman, Leeds.

MANCHESTER.—Structural steelwork for the Hyde-road car works extension, for Corporation.
•Edward Wood & Co., Ltd., Salford.

MANCHESTER.—Culverting of Red Lion Brook, Withington estate, for Housing Committee.
F. G. V. Freeman, Hollinwood.

MANCHESTER.—(*a*) Electrical work; (*b*) plastering; (*c*) plumbing and slating, new building at Committee's depot.
(*a*) •Meter Manufacturing Co., Ltd.
(*b*) •Tooth Bros.
(*c*) •A. E. Newey.
(All of Manchester.)

MERIDEN.—10 parlour and 10 non-parlour houses at Coleshill: same at Water Orton; 2 parlour and 4 non-parlour at Nether Whitacre; 6 parlour and 6 non-parlour at Castle Bromwich, for R.D.C. Mr. H. Pickering, Town Hall, Coleshill, Birmingham.
•Morris, Jacombs & Sons., Ltd., Small Heath: Non-parlour, £395 and £400; parlour, £480 and £485.

MILLBANK.—Lorry shed and stables at Millbank, Berryden, for Northern Co-operative Society, Ltd. Messrs. Tawse & Allan, Architects, 10, Bon-Accord-square, Aberdeen.

Reinforced concrete—
•Alexander Adamson, Laurencekirk.
Mason work—
•Alexander Adamson, Laurencekirk.
Joiner work—
•W. D. Forbes & Co., Aberdeen.
Slater work—
•George Currie & Co., Aberdeen.
Plaster work.
•James Scott & Son, Ltd., Aberdeen.
Plumber work—
•John Dean, Aberdeen.
Painter work—
•Northern Co-operative Society, Ltd.
Steelwork—
•George Bisset & Son, Aberdeen.

MONKTON.—Low-pressure hot-water heating installation at Monkton new council school, for Durham C.C.
•R. T. Vaux & Son, Sunderland £493 18 0

NEW SEAHAM.—Covering ceiling with board and repairing flat roofs at Council school, for Durham C.C.
•J. Clark & Son, New Seaham £516 6 6

NEWCASTLE.—New mining laboratory in Queen Victoria-road, for the Council of Armstrong College.
•Stephen Easten, Ltd., Newcastle.

NEWTOWN, WIGAN.—Church and schools, for the Wesleyan Church. Messrs. A. Brocklehurst & Co., Architects, 10, Norfolk-street, Manchester :—
•G. Holmes & Co., Warrington.

NORTHOWRAM, YORKS.—For Vicarage. Messrs. Walsh & Maddocks, 30, Harrison-road, Halifax.

Masons—
•J. A. Crowther & Co., Southowram.
Joiners—
•Raper & Dobson, Ltd., Bradford.
Plumber—
•Ernest Farnell, Queensbury.
Slater and Plasterers—
•H. Castle & Son., Ltd., Brighouse.
Casements and Leaded Lights—
•Doodson & Bain, Ltd., Manchester.

NOTTINGHAM.—Rebuilding the New Empress Cinema. Mr. Alfred J. Thraves, F.R.I.B.A., Architect, 12, Victoria-street :—
•F. W. C. Bowles & Son, Leicester.

ORMSKIRK.—For construction of 2 underground rainwater tanks, etc., for B.G., at the Poor Law Institution. Mr. A. Dickenson, 2, Railway-road :—

Rainwater tanks.
•R. Taylor & Sons, Ormskirk ... £278 0 0
Filter beds.
•R. Taylor & Sons, Ormskirk ... 55 10 0

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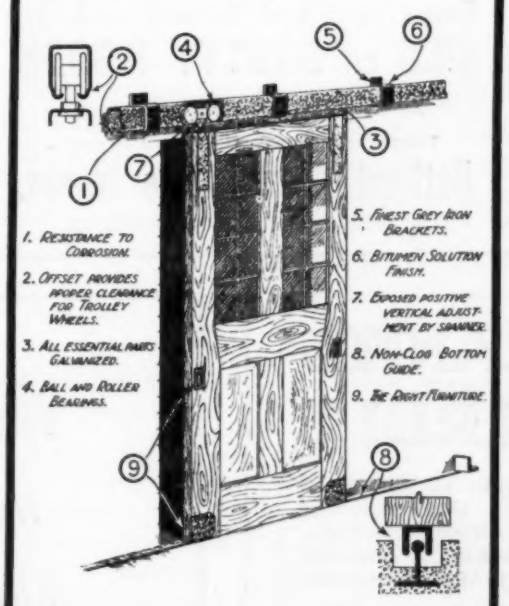
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OUNDLE.—4 cottages at Polebrook, for R.D.C. Mr. S. Broadbelt, 42, Glapthorpe-road.

C. R. Pettit & Son, Thrapston ...	£1,880
Pettit & Son, Ramsey	1,730
A. Tebbett, Polebrook	1,660
H. Spencer & Son, Elton	1,570
Loakes & Son, Thrapston	1,520
Freeman & Son, Oundle..... ...	1,435
•J. W. Barber, Peterboro'	1,420

OXFORD.—Supply and erection of boarded fencing for Corporation.

‡Smith & Sons, Kidlington ... £630 10 0

OXFORD.—Unclimbable iron fencing for Corporation.

‡Bayliss, Jones & Bayliss, Wolverhampton £186 0 10

PEEBLES.—Extensions to the water supply of West Linton, including small break pressure tank 2,600 yds. of 4 in. cast-iron and other pipes, track cutting, meter, connections, fencing, and other auxiliary works, for the C.C. Mr. J. Thomson, C.E., 20, Melville-street, Edinburgh.

Flaherty & McBride, Falkirk	£2,263 13 2
James Ritchie, Dunfermline	2,225 11 7
A. McNulty, Loanhead ...	2,197 3 2
D. C. Mitchell, Edinburgh ...	2,168 7 10
J. A. Young, Edinburgh ...	2,164 13 10
H. M. Murray & Co., Glasgow	2,152 15 6
William Jackson, Edinburgh	2,135 18 6
Robt. J. Morrison, Kirkcaldy	2,082 16 5
Topping & Co., Edinburgh ...	2,039 19 4
•R. Walter & Son, West Linton	1,985 1 6½

PEWSEY.—40 houses in various districts, for R.D.C. Mr. W. F. Bickford, architect to R.D.C.

4 *houses at Collingbourne Kingston—*	
Building and Public Works Construction Co., Swindon	£1,992
Minty & Swatton, Marlborough ...	1,992
P. C. King, Pewsey	1,980
Sturgess Bros., Andover	1,968
W. E. Chivers & Sons, Devizes ...	1,960
•Hawkins & Co., Ogbourne St. George	1,888
6 *houses at N. Tidworth—*	
W. E. Chivers & Sons, Devizes ...	£3,408
Sturgess Bros., Andover	3,120
•Building & Public Works Construction Co., Swindon	3,994
10 *house at Pewsey—*	
W. E. Chivers & Sons, Devizes ...	£5,800
Hoskins Bros., Denbury	5,800
P. C. King, Pewsey	5,250
•Building & Public Works Construction Co., Swindon	5,125
10 *houses at Ludgershall—*	
W. E. Chivers & Sons, Devizes ...	£5,700
Building & Public Works Construction Co., Swindon	4,990
•Sturgess Bros., Andover	4,990
4 *houses at North Newton—*	
P. C. King, Pewsey	£2,060
Building & Public Works Construction Co., Swindon	1,914
•W. E. Chivers & Sons, Devizes ...	1,912
4 *houses at Milton—*	
W. E. Chivers & Sons, Devizes ...	£2,000
Minty & Swatton, Marlborough ...	1,992
Building & Public Works Construction Co., Swindon	1,992
P. C. King, Pewsey	1,960
E. Howse, Pewsey	1,932
Hawkins & Co. Ogbourne St. George	1,900
• S. S. Gilbert & Sons, Wilcot ...	1,896
2 *houses at Woodborough—*	
Huntley & Son, Woodborough ...	£1,010
Building & Public Works Construction Co., Swindon	990
•W. E. Chivers & Sons, Devizes ...	970

PLYMOUTH.—Roads and sewers at Mount Gold, for C.B.
•A. J. Steer, Ltd. £7,923 7 3

POOLE.—Extensions to male casual ward at Institution, for B.G. Mr. H. J. Vick, surveyor :—
•A. W. Gray, Poole £399

PORTSMOUTH.—Wesleyan Church Hall, Eastney, Portsmouth, for the Trustees. Messrs. A. Brocklehurst & Co., architects and surveyors, 10, Norfolk-street, Manchester. Quantities by architects :—
•John Lay & Co., Portsmouth £12,243

PRESTON.—Additions to the garage of the Ribble Motor Services, Ltd., 4, Birley-street. Mr. S. Taylor, F.R.I.B.A., architect, 78, Manchester-road, Burnley.
•Croft & Sons, Preston.

RAMSBOTTOM.—New schools and parochial hall in Queen-street, for the Rev. Father MacGuinness, of St. Joseph's Church. Mr. H. A. Tearsley, architect, Irene-chambers, 25, Market-street, Manchester :—
•Hallwoods, Hyde.

REIGATE.—Works of improvement at junctions of West-road and Chart-lane, for the R.D.C.

A. C. Soar, Thornton Heath	£252 9 6
G. S. Faulkner & Sons ...	212 19 3

SOUTH SHIELDS.—Six shops with houses over, on the Cleadon Park estate, at the junction of Park-avenue and Sunderland-road, for C.B. Mr. S. G. Stanton, Borough Engineer.
•W. D. Alleson, Whitburn ... £4,300 0 0

SOUTHEND-ON-SEA.—Erection of 22 flats, for the C.B. Mr. R. H. Dyer, Borough Engineer, Municipal Buildings, Clarence-road :—

12 *Flats—*	
•Johns Bros., Woolwich	£5,730 19
10 *Flats—*	
•Prime & Son, Westcliff	4,450 0

SOUTHSEA COMMON.—Erection of reinforced concrete bandstand, for Portsmouth C.C. Mr. A. W. Ward, City Engineer, Guildhall, Portsmouth :—

Tanner Bros., Southsea	£1,518
Frank Bevis, Ltd., Portsmouth	1,250
E. & A. Sprigings, Portsmouth	1,138
*Sadler & Co., Dollis Hill	939

SOUTHWICK.—50 houses on the Marley Potts estate, for the U.D.C. :—

*J. J. Hodgson £19,000

STIRLING.—Bridge at Castlecary, for C.C. :—

*Sir William Arrol & Co. £6,205

STOCKPORT.—20 houses on Cheadle-Heath site, for C.B. :—

*John Collin.

STOKE-ON-TRENT.—Motor garage and locomotive house at Gas Works, Etruria, for T.C. Chief Gas Engineer.

*Cousins & Allport, Burslem.

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STRATFORD-UPON-AVON. — 12 non-parlour houses at Knight's-lane, Tiddington, for T.C. Borough Surveyor :—

F. C. Harris	£5,724
J. Harris & Sons	5,677
Smith & Unitt	5,472
T. J. Hartwell	5,325
*E. T. Kennard & Son	5,250

(All of Stratford-upon-Avon.)

STRETFORD.—Construction of bridge and embankment at Station-road, for U.D.C.

*Skipworth, Jones & Lomax... £3,041 10 0

STRETFORD.—Exterior painting of the Town Hall, for T.C.

*Jones & Jackson, Ltd. ... £128 10 0

STUBBINGTON.—12 houses at Old-street, for Fareham R.D.C. Mr. L. W. Hunt, 97, West-street, Fareham :—

‡A. H. Tribbeck, Stubbington..... £5,125

SWANSEA.—Electric wiring of (*a*) Sketty Mixed ; (*b*) Sketty Infants' ; (*c*) Crombroerla Boys', for E.C. :—

*(*a*) Cole & Day	£130 0 0
*(*b*) H. Norman Kirk	135 0 0
*(*c*) G. L. Ward & Co.	137 10 0

THURLES, IRELAND.—Reconstruction of the late fever hospital, which will in future constitute the new district hospital, for Tipperary (N.R.) County Health Board.

Walsh Bros., Clonmel	...	£6,560 10 0
M. Kennedy, Thurles	...	5,951 9 4
J. Lambe, Thurles	...	5,461 13 0
J. Ryan & Son, Limerick	...	5,395 0 0
C. Doyle, Mullingar	...	5,289 11 0
T. Brophy, Thurles	...	4,803 19 4
W. King, Dublin	...	4,628 0 0
Dwyer & Fogarty, Thurles	...	4,517 10 0
*T. Maher, Parkmore, Roscrea		4,109 0 6½

TOTTINGTON.—Six houses at Walshaw housing scheme, for the Committee. The Borough Surveyor, Council Offices :—

*T. & J. Foster, Ramsbottom.

TRAMORE.—New waterworks scheme.

*Lee, Arklow £3,090

WALLASEY.—Extension and alteration to administrative block, infectious diseases hospital. Mill-lane, for C.B.

*J. A. Milestons & Son, Wallasey ... £11,813

WALLASEY.—Extension of offices at Seaview-road, for C.B.

*R. J. Leary, Wallasey ... £390 16 4

WALLASEY.—Supply, laying and connecting of high tension cable from Seaview-road to Seabank-road, for C.B.

*British Insulated Cables, Ltd. £1,370 12 1

WHITSTABLE.—(*a*) Shelter and (*b*) dressing rooms, conversion of the Watch House into conveniences at the Old Coastguard station, West Beach, Whitstable, and construction and supply of bathing boxes to the Bathing Station, Tankerton Beach, for U.D.C. Mr. J. Dunn, Surveyor and Water Engineer.

*(*a*) F. Browning, Whitstable ...	£153	2	6
*(*b*) J. Kemp, Whitstable	1,446	5	0

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WHITWORTH.—Council school at Tonacliffe, for the U.D.C. County Architect, County Offices, Whitworth :—

*R. & T. Howarth, Rochdale.

YORK.—School on the Tang Han Estate, for the Education Committee of the York Council. Mr. F. T. Plenty, architect, of 9, Lendal :—

*Wm. Bellerby, Ltd., York ... £22,830 0 0

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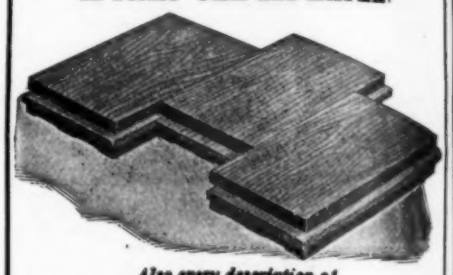
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